

SUMTER COUNTY BOARD OF COMMISSIONERS
EXECUTIVE SUMMARY

SUBJECT: Sumter Electric Cooperative, Inc. - Major Development – Preliminary Plans for Substation Expansion – SR 44/Wildwood (Staff recommends approval).

REQUESTED ACTION: Approve Preliminary Plans for Sumter Electric Cooperative, Inc. Substation Expansion.

☐ Work Session (Report Only)

DATE OF MEETING: August 10, 2010

☒ Regular Meeting

☐ Special Meeting

CONTRACT: ☒ N/A

Vendor/Entity: _____

Effective Date: _____

Termination Date: _____

Managing Division / Dept: _____

Planning

BUDGET IMPACT: _____

☐ Annual

FUNDING SOURCE: _____

☐ Capital

EXPENDITURE ACCOUNT: _____

☒ N/A

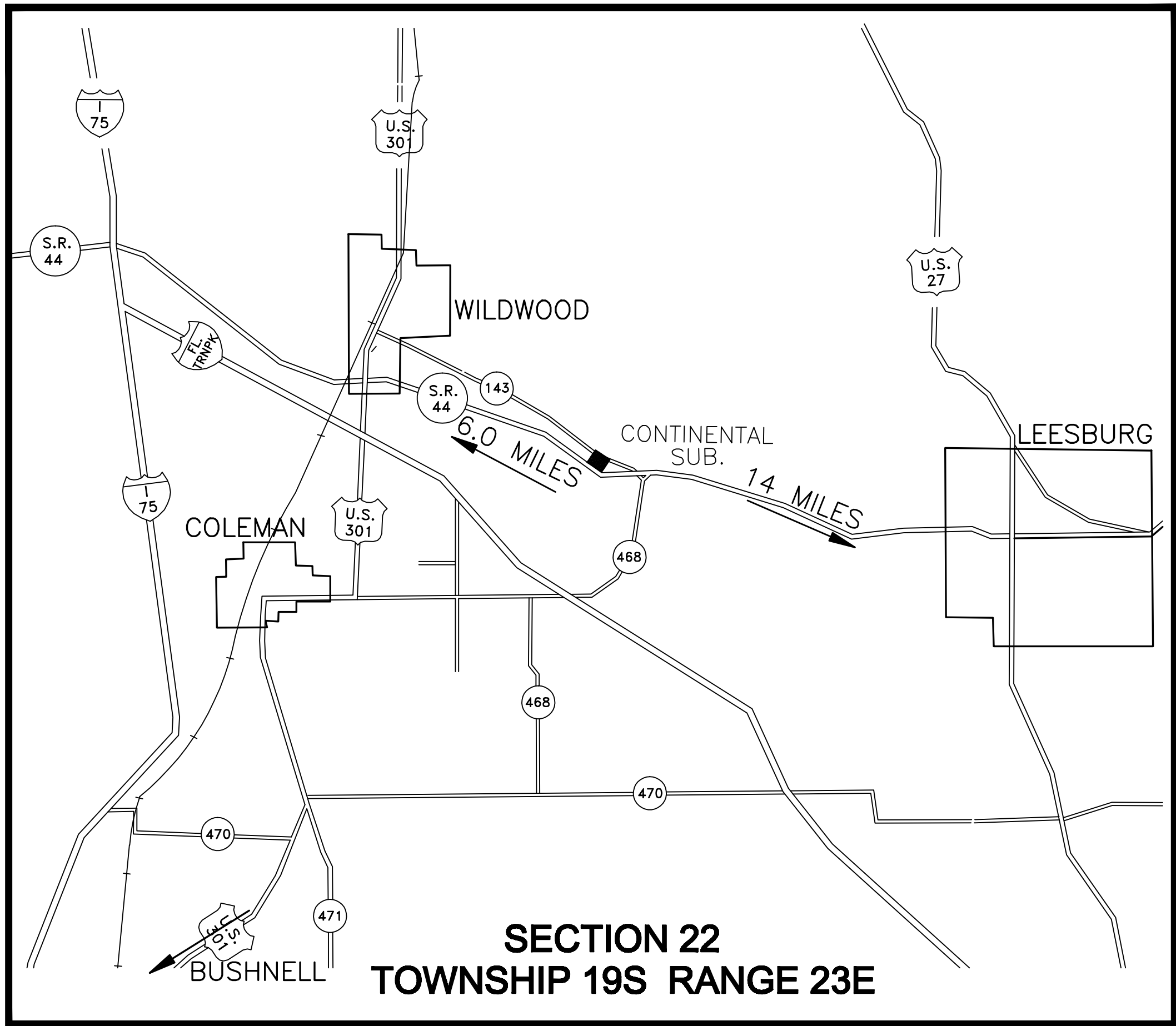
HISTORY/FACTS/ISSUES:

The Development Review Committee is compiled of staff from several county agencies and consulting engineers. The Committee meets weekly to review applications for Use and Development Permits. The DRC's recommendations are then forwarded to the BOCC. The plans were reviewed and found to be in compliance with the Land Development Code with only minor changes required.

Sumter Electric Cooperative, Inc. - Major Development – Preliminary Approval

Property Owner: Sumter Electric Cooperative Inc. (SECO) – Property Developer: SECO - Project Agent: Burrell Engineering - Property Location: East SR 44/Wildwood – Total Acreage of Project: 1.44 acres MOL – Project Zoning: M1 - Project Proposal: Expansion of an existing substation.

CONTINENTAL SUBSTATION



VICINITY MAP
N.T.S.



OWNER/DEVELOPER:

SUMTER ELECTRIC COOPERATIVE, INC.
330 SOUTH U.S. HIGHWAY 301
SUMTERVILLE, FLORIDA 33585-0301
(352) 793-3801
CONTACT: KENNY RODRIGUE

SITE ADDRESS:

6974 E. SR 44
WILDWOOD, FLORIDA 33585

DESCRIPTION

LOTS 11,12,13, AND 14, LAKE DEATON SHORES FIRST ADDITION, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 2, PAGE 25 1/2, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA.

GENERAL NOTES:

- ALL CONSTRUCTION COVERED BY THESE PLANS SHALL COMPLY WITH THE MATERIAL REQUIREMENTS AND QUALITY CONTROL STANDARDS CONTAINED IN THE SUMTER COUNTY LAND DEVELOPMENT CODE.
- TOPOGRAPHIC SURVEY INFORMATION TAKEN FROM TOPOGRAPHIC SURVEY FOR THE SUMTER ELECTRIC CO-OP, INC. PROVIDED BY A.M. GAUDET & ASSOCIATES, INC. LB# 7158 DATED 12/29/2009.
- THE FOLLOWING ARE ABBREVIATIONS AS USED IN THESE CONSTRUCTION PLANS:
A.C.C.M.P.A. = ASPHALT COATED CORRUGATED METAL PIPE ARCH
A.C.C.M.P. = ASPHALT COATED CORRUGATED METAL PIPE
TYP. = TYPICAL
R = RADIUS
STA. = STATION
INV. = INVERT
ELEV. = ELEVATION
R/W = RIGHT-OF-WAY
HORIZ. = HORIZONTAL
VERT. = VERTICAL
V.C. = VERTICAL CURVE
P.V.I. = POINT OF VERTICAL INTERSECTION
P.R.C. = POINT OF REVERSE CURVATURE
LT. = LEFT
RT. = RIGHT
P.I. = POINT OF INTERSECTION
P.C. = POINT OF CURVATURE
P.T. = POINT OF TANGENCY
INT. = INTERSECTION
SMH. = STORM MANHOLE
ADS = ADS BRAND N12-ST-IB PIPE
- CONTRACTOR SHALL IMMEDIATELY CONTACT PROJECT ENGINEER, BURRELL ENGINEERING, INC. IF PLANS ARE UNCLEAR, REQUIRING INTERPRETATION OR CONFLICTING INFORMATION IS DISCOVERED.
- SOD ALL DISTURBED AREAS WITHIN THE PROJECT UNLESS OTHERWISE NOTED.
- IF PREHISTORIC OR HISTORIC ARTIFACTS, SUCH AS POTTERY OR CERAMICS, STONE TOOLS, OR METAL IMPLEMENTS, DUGOUT CANOES, OR ANY OTHER PHYSICAL REMAINS THAT COULD BE ASSOCIATED WITH NATIVE AMERICAN CULTURES, OR EARLY COLONIAL OR AMERICAN SETTLEMENT ARE ENCOUNTERED WITHIN THE PROJECT AREA, THE CONTRACTOR SHALL CEASE ALL CONSTRUCTION ACTIVITIES IN THE IMMEDIATE VICINITY OF SUCH DISCOVERIES AND CONTACT THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE. WORK IN THE AFFECTED AREA SHALL NOT RESUME UNTIL THE CONTRACTOR IS AUTHORIZED TO PROCEED BY THE OWNER. IN THE EVENT THAT UNMARKED HUMAN REMAINS ARE ENCOUNTERED DURING CONSTRUCTION. ALL WORK SHALL STOP AND THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF THE DISCOVERY.
- SYMBOLS, SUCH AS INLETS, HYDRANTS, MANHOLES, AND EROSION CONTROL SHOWN HEREON ARE A GRAPHIC REPRESENTATION FOR DRAWING CLARITY ONLY. CONTRACTOR SHOULD REFER TO THE INDIVIDUAL DETAILS SHOWN ON THE APPLICABLE DETAIL SHEET FOR THE APPROPRIATE INSTALLATION LOCATION AND SPECIFICATIONS.
- EXISTING UTILITIES ABOVE AND BELOW GROUND AS SHOWN HEREON ARE A COMPILATION OF AS-BUILT SURVEYS, SPECIFIC PURPOSE SURVEYS AND AS-BUILT DATA FROM PREVIOUS CONSTRUCTION. THIS INFORMATION MAY NOT BE A COMPLETE REPRESENTATION OF ALL EXISTING FACILITIES AND THE ACCURACY OF THIS INFORMATION IS NOT WARRANTED. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES PRIOR TO EXCAVATION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES IMMEDIATELY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE INSTALLATION OF UTILITIES WITH THE APPROPRIATE UTILITY PROVIDER.
- THIS PROJECT CONTAINS CERTAIN PREVISIONS DEALING WITH THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) WHICH THE CONTRACTOR SHALL BECOME AWARE OF AND WILL ABIDE BY. THESE ARE INCLUDED IN THE STORMWATER POLLUTION PREVENTION PLAN WITHIN THESE PLANS, AS WELL AS A SEPARATE DOCUMENT, WHICH IS PART OF THE STORMWATER POLLUTION PREVENTION PLAN.

ENGINEER'S CERTIFICATION NOTE:
This certification is provided as confirmation that the site design, roadways, drainage, water and/or sewer facilities depicted on these plans have been designed in accordance with generally accepted engineering practices and the requirements of permitting agencies having Jurisdiction over such facilities. It is not intended to certify the accuracy of existing surface features or subsurface conditions, which may have been used for design, but were certified by other professionals.

Schedule of Sheets

SHEET NO.	CONTENTS
CO-02-101	Title Page
CO-02-102	Survey
CO-02-103a	Survey
CO-02-103b	Survey
CO-02-104	Storm Water Pollution Prevention Plan
CO-02-105	Site Geometry Plan
CO-02-106	Grading & Drainage Plan
CO-02-107	DRA Details
CO-02-108	Drainage & Roadway Details
CO-02-109	Installation Specifications
CO-02-1010	Installation Specifications

SUMTER ELECTRIC COOPERATIVE, INC.
330 SOUTH US 301
SUMTERVILLE , FLORIDA 33585


FLORIDA - 16 - SUMTER

Sumter County Submittal Set - Preliminary and Engineering Review

BEI

BURRELL
ENGINEERING, INC.
CIVIL ENGINEERING CA No. 7973

12005 N. FLORIDA AVE DUNNELLON, FL 34434 PH. 352-489-4144 FAX 352-489-4741
BEI JOB NO. 09-53, FILE NO. K-10, DRAWING NO. Base 09-53, LAYOUT

Revision:	BY:	Date:	Drawn by:	Provided by:	Approved Date	Date	CONTINENTAL SUBSTATION CIVIL INFORMATION TITLE PAGE	Work Order
Add Survey sheet CO-02-103b, renumber survey sheets, update sheet index on cover page	DFS	05-14-10	DFS		03/19/10	MARCH 2010		900852
			Scale NTS		Approved By K. RODRIQUE	Engineer KEN FRINK		Drawing # CO-02-101

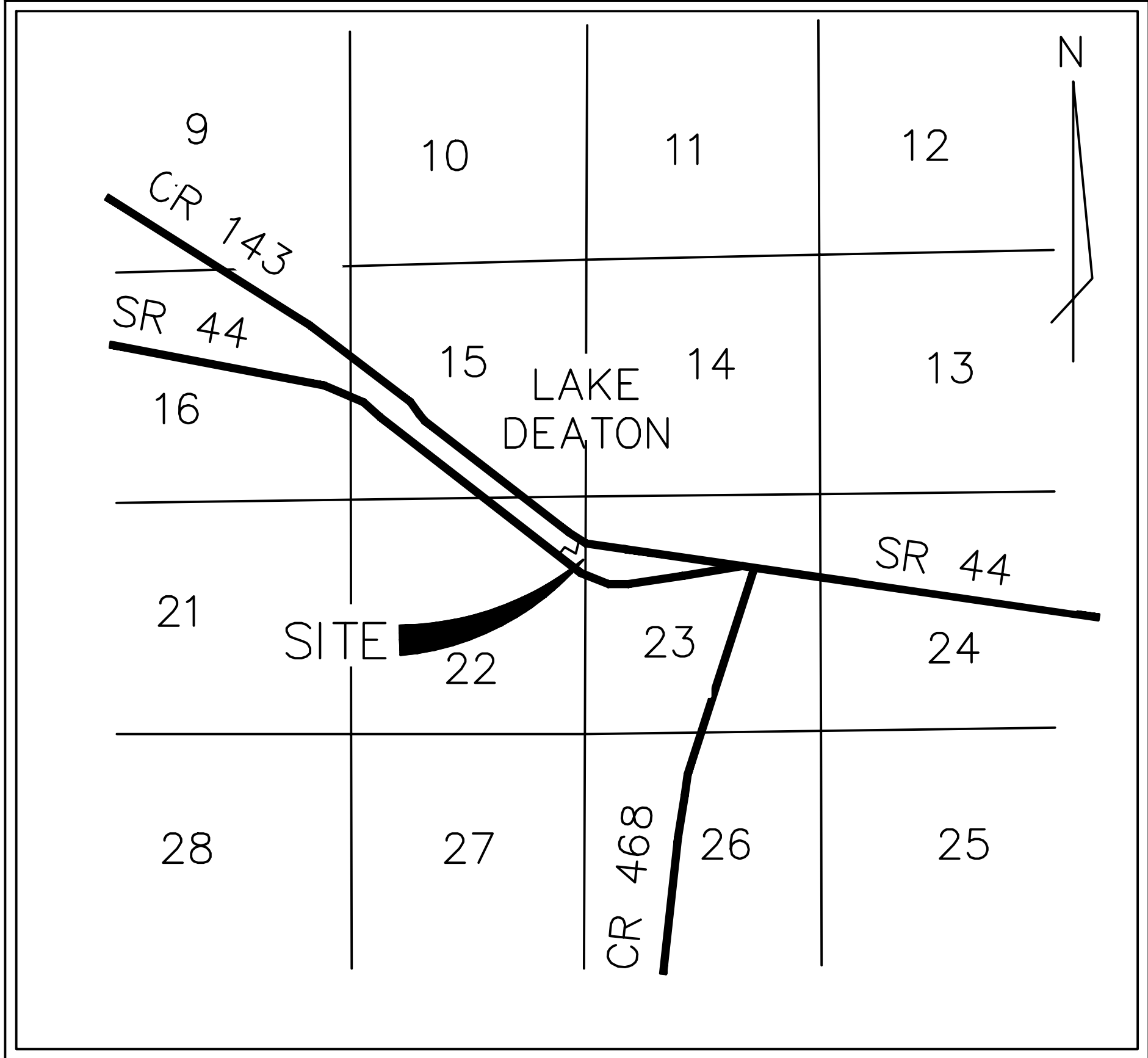
KEN FRINK, P.E.
REG. ENGINEER NO. 47750
STATE OF FLORIDA
DATE

Z:\SECO Continental Substation\dwg\Finals\COVER SHEET 09-53.dwg, 36 X 24, 7/16/2010 12:06:09 PM, DWG To PDF.pc3, KW

LEGEND

- ⊙ = FOUND IRON PIPE
- = FOUND 5/8" IRON ROD AND CAP(FIRC)
- = FOUND 4"x4" CONCRETE MARKER (FCM)
- ⊕ = CENTER LINE
- o-;-x- = FENCE LINE
- v- = LINE NOT DRAWN TO SCALE
- R = RADIUS
- L = ARC LENGTH
- T = TANGENT LENGTH
- D = CENTRAL ANGLE (DELTA)
- C = CHORD LENGTH
- CB = CHORD BEARING
- (FDOT) FLORIDA DEPT OF TRANSPORTATION
- TBM = TEMPORARY BENCH MARK
- CLF = CHAIN LINK FENCE
- R/W = RIGHT OF WAY LINE
- ☼ = GUY POLE
- ⦿ = POWER POLE
- ⦿● = POWER POLE W/UNDERGROUND
- UFO = UNDERGROUND FIBER OPTIC
- OHE = OVERHEAD POWER LINE
- UE = UNDERGROUND ELECTRIC
- CMP = CORRUGATED METAL PIPE
- RCP = REINFORCED CONCRETE PIPE
- HDPE= HIGH DENSITY POLYETHYLENE
- ⌈ = TELEPHONE RISER
- ↙ = GUY ANCHOR
- SHW = SEASONAL HIGH WATER
- ELEV = ELEVATION
- MES = MITERED END SECTION

TOPOGRAPHIC SURVEY
CONTINENTAL SUBSTATION



LOCATION MAP
TOWNSHIP 19S RANGE 23E
1"=1/2 MILE

DESCRIPTION

LOTS 11,12,13, AND 14, LAKE DEATON SHORES FIRST ADDITION, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 2, PAGE 25 1/2, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA.

NOTES

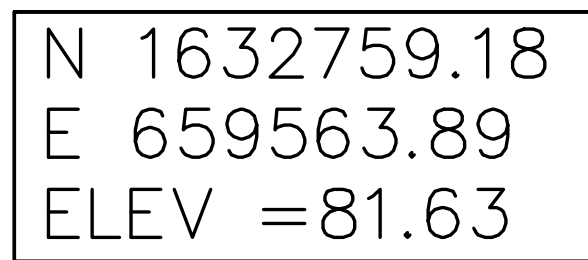
1. BEARINGS ARE BASED ON GRID NORTH WITH THE EAST BOUNDARY OF THE NE 1/4 OF SECTION 22-19-23 BEARING S.00°17'32"W.
2. BOUNDARY AND DESCRIPTION INFORMATION BASED ON PREVIOUS SURVEY BY HUNT'S SURVEYING AND MAPPING DATED FEBRUARY 2, 2007 AND ROTATED TO BEARING BASE STATED ABOVE. THIS IS NOT A BOUNDARY SURVEY.
3. LANDS WERE NOT ABSTRACTED BY THIS COMPANY FOR OWNERSHIP, EASEMENTS OR OTHER INSTRUMENTS OF RECORD WHICH MAY AFFECT USE OR TITLE OF SAID LANDS.
4. ALL RIGHT-OF-WAYS SHOWN ARE PHYSICALLY OPEN UNLESS NOTED.
5. NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
6. ELEVATIONS BASED ON NAVD 1988 AND REFERENCED TO NGS BENCHMARK R 57 RESET 1958 WITH A PUBLISHED ELEVATION OF 70.6 FEET. SUPERSEDED NGVD 1929 ELEVATION LISTED AT 71.5 FEET WITH A DATUM DIFFERENCE OF -0.9 FEET NGVD 1929 TO NAVD 1988.
7. COORDINATES SHOWN HEREON BASED ON NAD 83, STATE PLANE ZONE FLORIDA WEST
8. DATE OF FIELD SURVEY: DECEMBER 22, 2009
9. UNDERGROUND LOCATES PER SUNSHINE ONE CALL TICKET NUMBER 348905723. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM MARKINGS BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR THAT SUCH UTILITIES ARE IN THE EXACT LOCATION INDICATED.
10. THE WETLAND BOUNDARIES DEPICTED HEREON ARE BASED ON MARKINGS BY OTHERS AND ARE NUMBERED HEREON ACCORDINGLY.
11. ACCORDING TO THE NATIONAL FLOOD INSURANCE RATE MAP FOR SUMTER COUNTY, FLORIDA, COMMUNITY PANEL NO. 120296 0125 B, EFFECTIVE DATE OF MARCH 15, 1982, THE PROPERTY DESCRIBED HEREIN LIES IN ZONE "C", AN AREA DEFINED AS MINIMAL FLOODING.

CERTIFY TO:
SUMTER ELECTRIC COOPERATIVE, INC.
BURRELL ENGINEERING, INC.

I HEREBY CERTIFY THAT THE HEREON DEPICTED PARCEL OF LAND WAS SURVEYED UNDER MY DIRECTION AND THAT SAID SURVEY CONFORMS TO THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF LAND SURVEYORS IN CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

A.M. GAUDET & ASSOCIATES, INC. LB#7158
ANDRUS M. GAUDET REGISTERED LAND
SURVEYOR # 5316 STATE OF FLORIDA

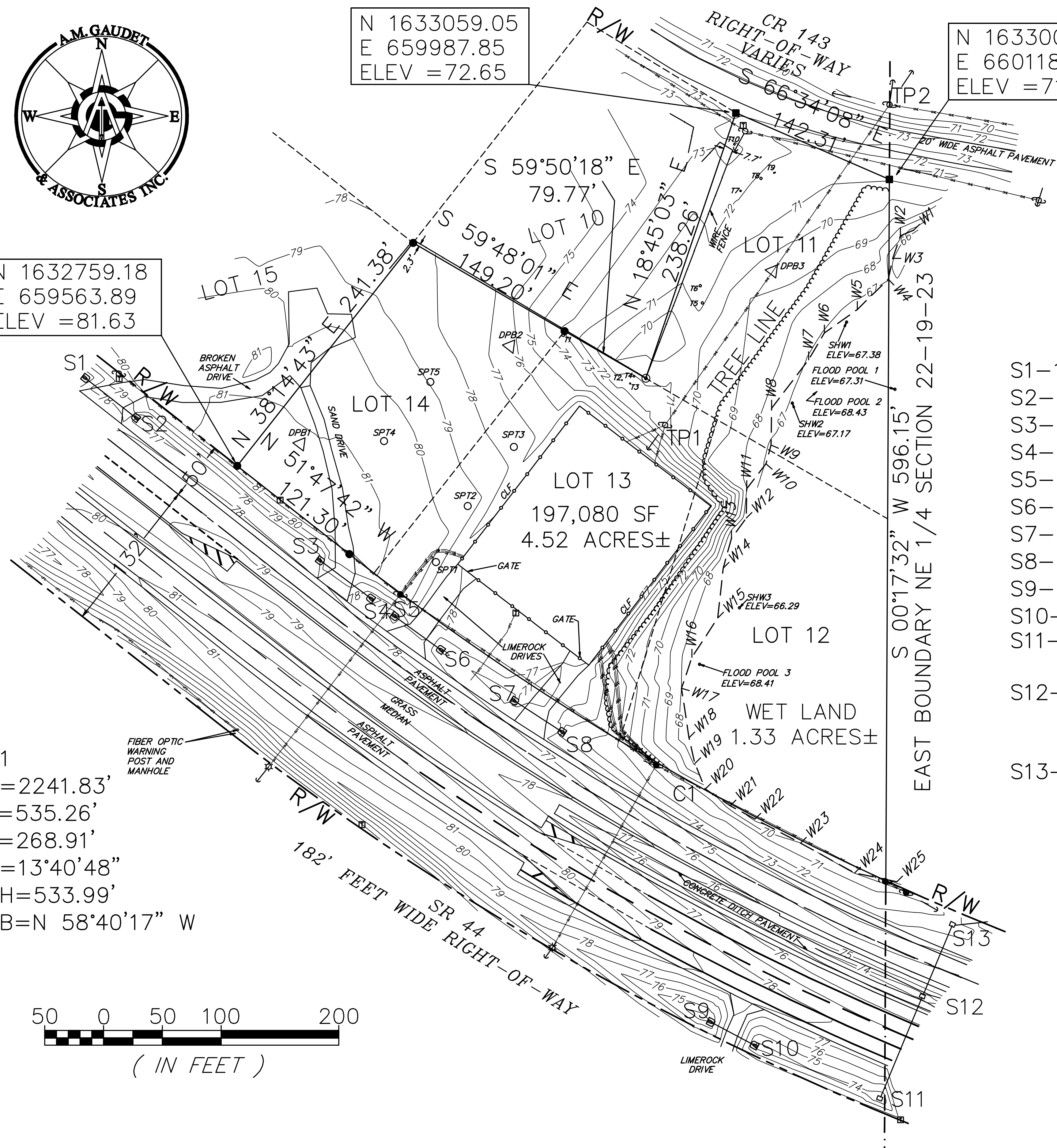
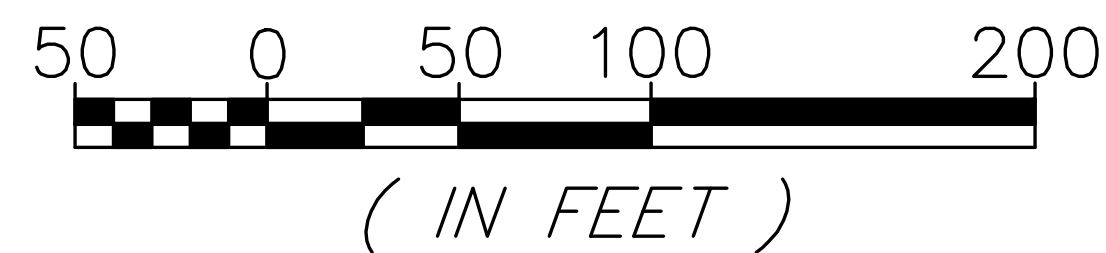
Revision:	BY:	Date:	Drawn by:	Provided by:	Approved Date	Date	TOPOGRAPHIC SURVEY CONTINENTAL SUBSTATION	Work Order
ADDED SHEET 3 FOR WETLAND DETAIL	AMG	05/10/10	AMG		12/29/09	12/29/09		Drawing #
			Scale		Approved By	Engineer		09075S - 1
			NA		A. GAUDET			



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N 1633059.05
E 659987.85
ELEV =72.65
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N 1633002.62
E 660118.37
ELEV =71.12
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C1
R=2241.83'
L=535.26'
T=268.91'
D=13°40'48"
CH=533.99'
CB=N 58°40'17" W



S1-18" CMP	MES	INVERT=75.95
S2-18" CMP	MES	INVERT=76.54
S3-18" CMP	MES	INVERT=77.20
S4-18" CMP	MES	INVERT=76.93
S5-18" CMP	MES	INVERT=76.15
S6-18" CMP	MES	INVERT=75.87
S7-18" CMP	MES	INVERT=75.39
S8-18" CMP	MES	INVERT=74.53
S9-18" RCP	MES	INVERT=73.85
S10-18" RCP	MES	INVERT=73.56
S11-STORM INLET	GRATE=73.45	
24" HDPE	INVERT=70.45N	
S12-STORM INLET	GRATE=73.79	
24" HDPE	INVERT=70.36S	
24" HDPE	INVERT=70.24N	
S13-STORM INLET	GRATE=72.65	
24" HDPE	INVERT=69.62S	
24" HDPE	INVERT=69.47NE	

T1-30"OAK
T2-10"OAK
T3-12"OAK
T4-18"OAK
T5-TWIN 18"OAKS
T6-24" OAK
T7-15"PINE
T8-24"OAK DEAD
T9-TWIN 10"OAKS
T10-18"OAK

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TP1
N 1632793.87
E 659927.66
TP2
N 1633066.13
E 660118.50
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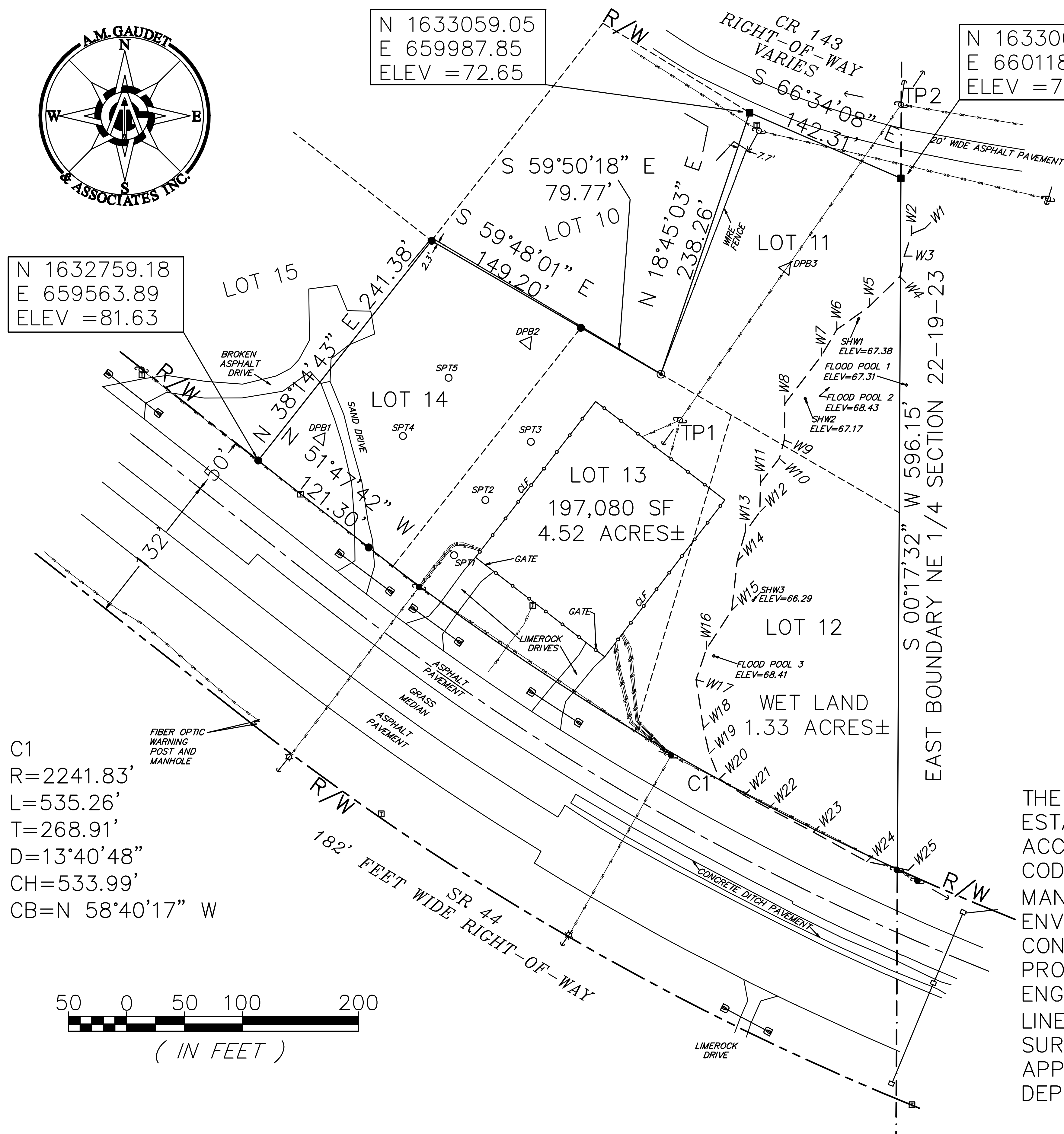
Revision:	BY:	Date:	Drawn by:	Provided by:	Approved Date	Date	<p align="center">TOPOGRAPHIC SURVEY</p> <p align="center">CONTINENTAL SUBSTATION</p>	Work Order
ADDED SHEET 3 FOR WETLAND DETAIL	AMG	05/10/10	AMG		12/29/09	12/29/09		Drawing #
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			1" = 50'		A. GAUDET			



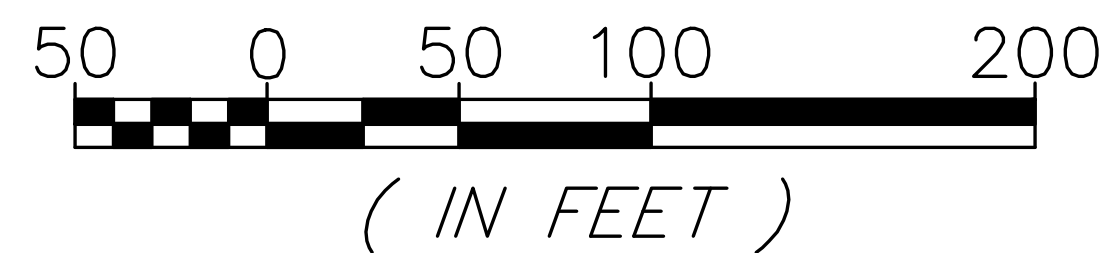
N 1633059.05
E 659987.85
ELEV = 72.65

N 1633002.62
E 660118.37
ELEV = 71.12

N 1632759.18
E 659563.89
ELEV = 81.63



C1
R=2241.83'
L=535.26'
T=268.91'
D=13°40'48"
CH=533.99'
CB=N 58°40'17" W

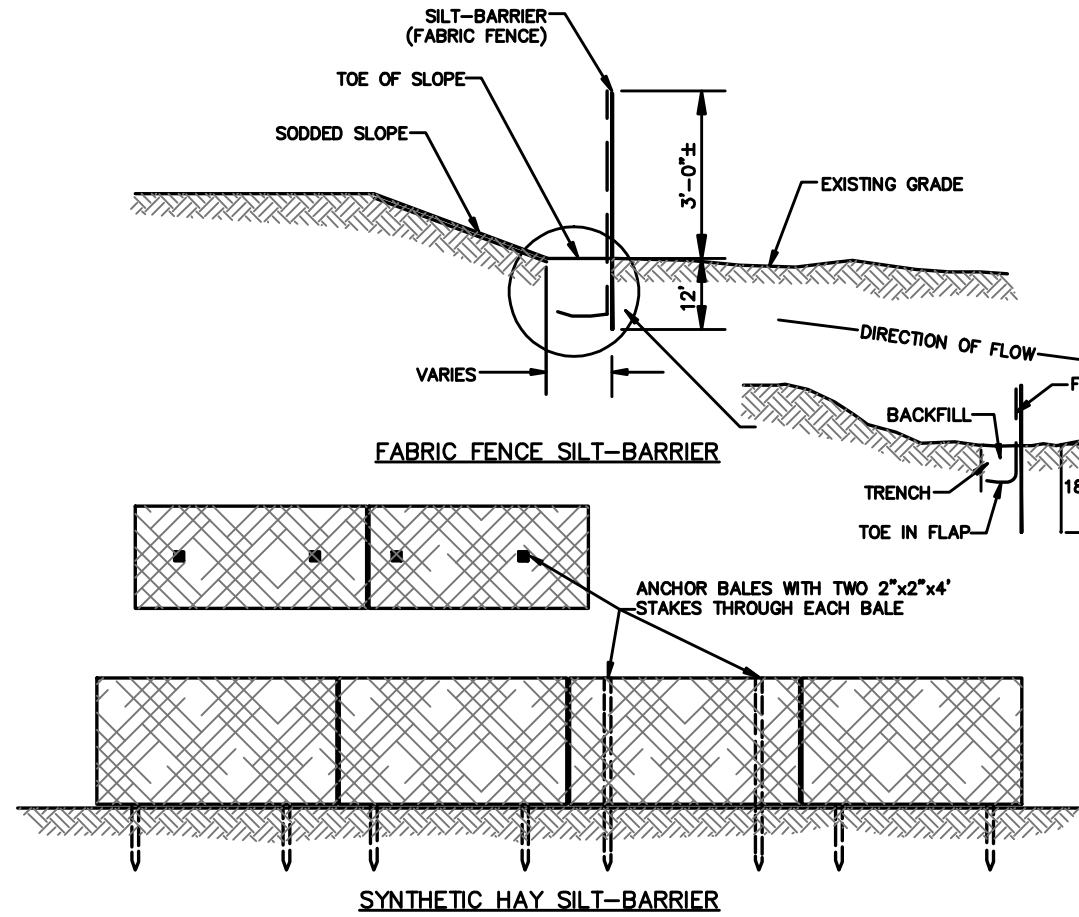
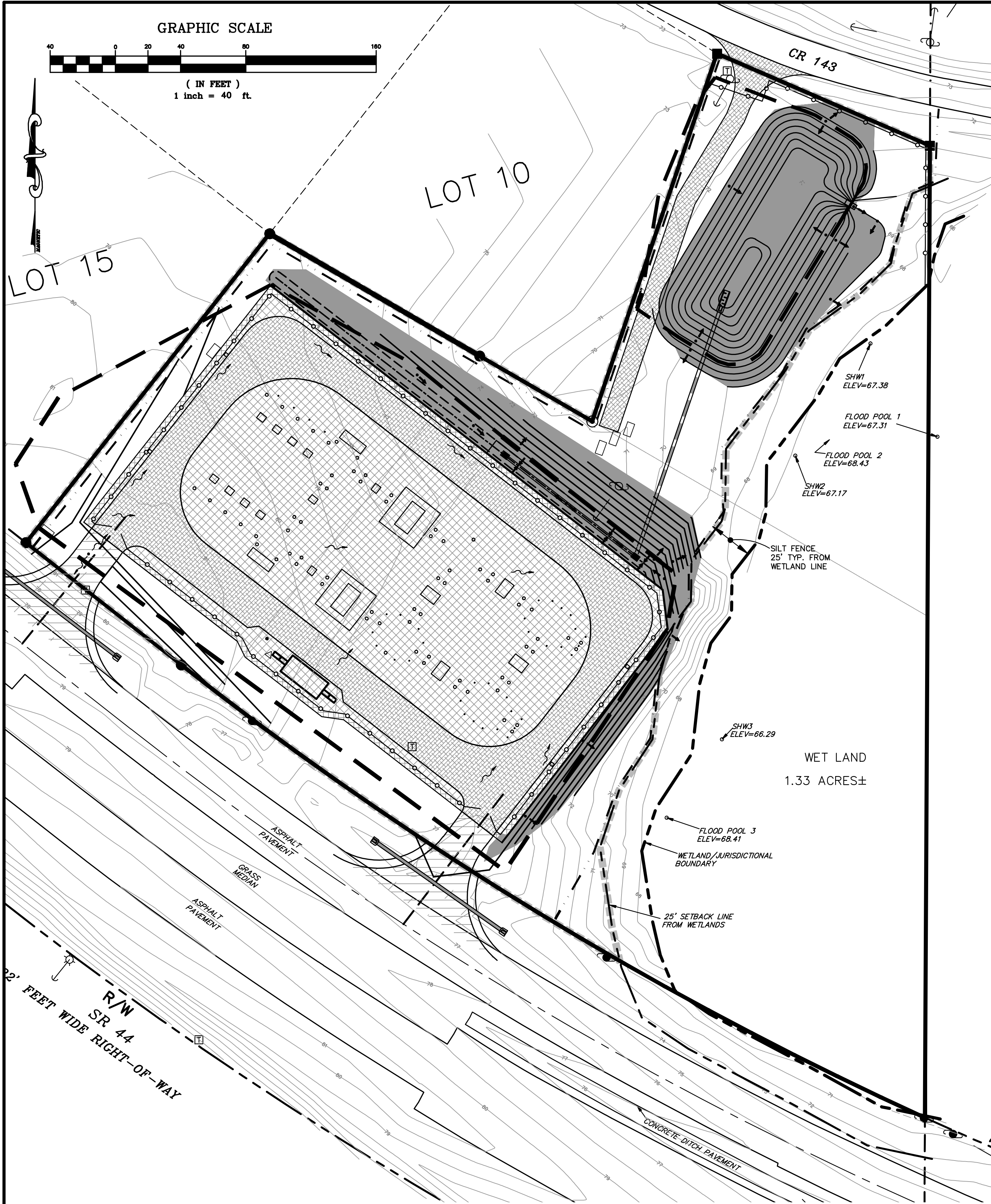


WETLAND POINTS			
NORTHING	EASTING	ELEV	DESCRIPTION
1632959.49	660139.13	66.62	W-1
1632954.70	660127.76	67.26	W-2
1632935.51	660121.23	66.32	W-3
1632917.79	660117.42	67.04	W-4
1632892.04	660091.03	66.61	W-5
1632872.05	660063.05	66.93	W-6
1632849.23	660049.65	66.91	W-7
1632808.15	660018.20	67.65	W-8
1632776.88	660017.76	66.87	W-9
1632760.94	660013.49	66.88	W-10
1632739.73	659997.05	68.02	W-11
1632714.71	659996.67	67.15	W-12
1632697.56	659984.04	67.05	W-13
1632672.26	659977.10	67.24	W-14
1632629.86	659972.45	66.41	W-15
1632596.39	659950.45	67.20	W-16
1632570.07	659941.65	67.99	W-17
1632527.98	659948.02	67.14	W-18
1632506.15	659953.00	67.84	W-19
1632484.46	659961.90	70.42	W-20
1632470.20	659983.04	69.46	W-21
1632458.96	660004.13	68.67	W-22
1632438.51	660042.88	70.02	W-23
1632413.11	660088.83	69.95	W-24
1632405.69	660124.76	68.69	W-25
1632881.40	660081.94	67.38	SHW1
1632812.51	660035.84	67.17	SHW2
1632638.55	659990.86	66.29	SHW3
1632824.20	660123.03	67.31	FLOOD POOL 1
1632822.35	660056.85	68.43	FLOOD POOL 2
1632590.48	659956.93	68.41	FLOOD POOL 3

THE WETLAND JURISDICTION LINE(S) SHOWN HEREON WERE ESTABLISHED IN THE FIELD ON DECEMBER 15, 2009 IN ACCORDANCE WITH CHAPTER 62-340 FLORIDA ADMINISTRATIVE CODE AND THE CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (JANUARY 1987) BY MICHAEL G. CZERWINSKI, P.A., ENVIRONMENTAL CONSULTANTS AND REPRESENT THE CONDITIONS PRESENT ON THAT DATE. STAFF INCLUDES PROFESSIONAL WETLAND SCIENTISTS AND U.S. ARMY CORPS OF ENGINEERS CERTIFIED WETLAND DELINEATORS. THE WETLAND LINE(S) REPRESENTING THE LIMITS OF WETLANDS AND/OR SURFACE WATERS OF THE STATE WERE INSPECTED AND APPROVED BY NWANKAKU ONWUNLI OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION ON MAY 5, 2010.

Revision:	BY:	Date:	Drawn by:	Provided by:	Approved Date:	Date:	TOPOGRAPHIC SURVEY WETLAND CONTINENTAL SUBSTATION	Work Order
ADDED SHEET 3 FOR WETLAND DETAIL	AMG	05/10/10	AMG		12/29/09	12/29/09		Drawing #
			Scale		Approved By	Engineer		09075S - 3
			1"=50'		A. GAUDET			

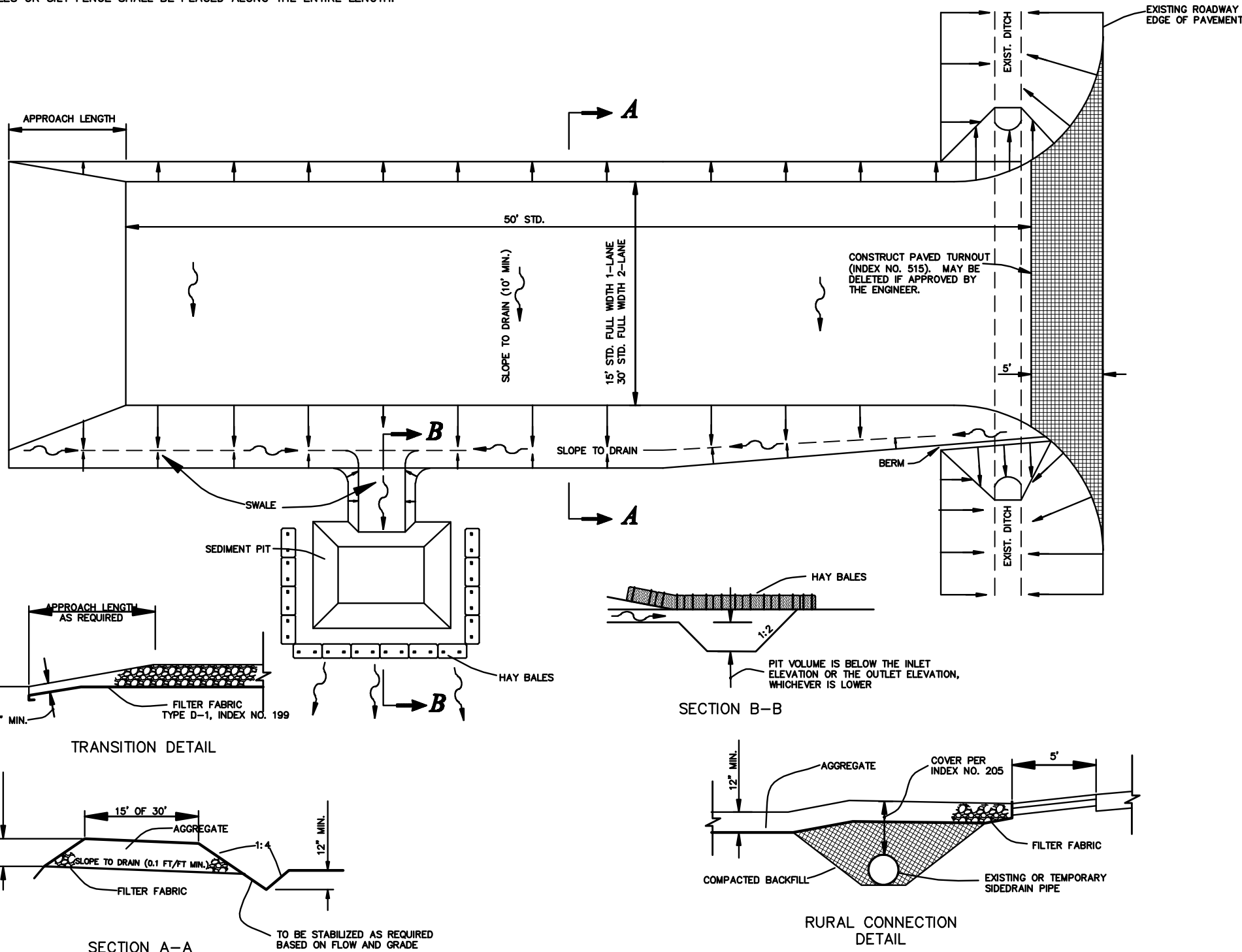
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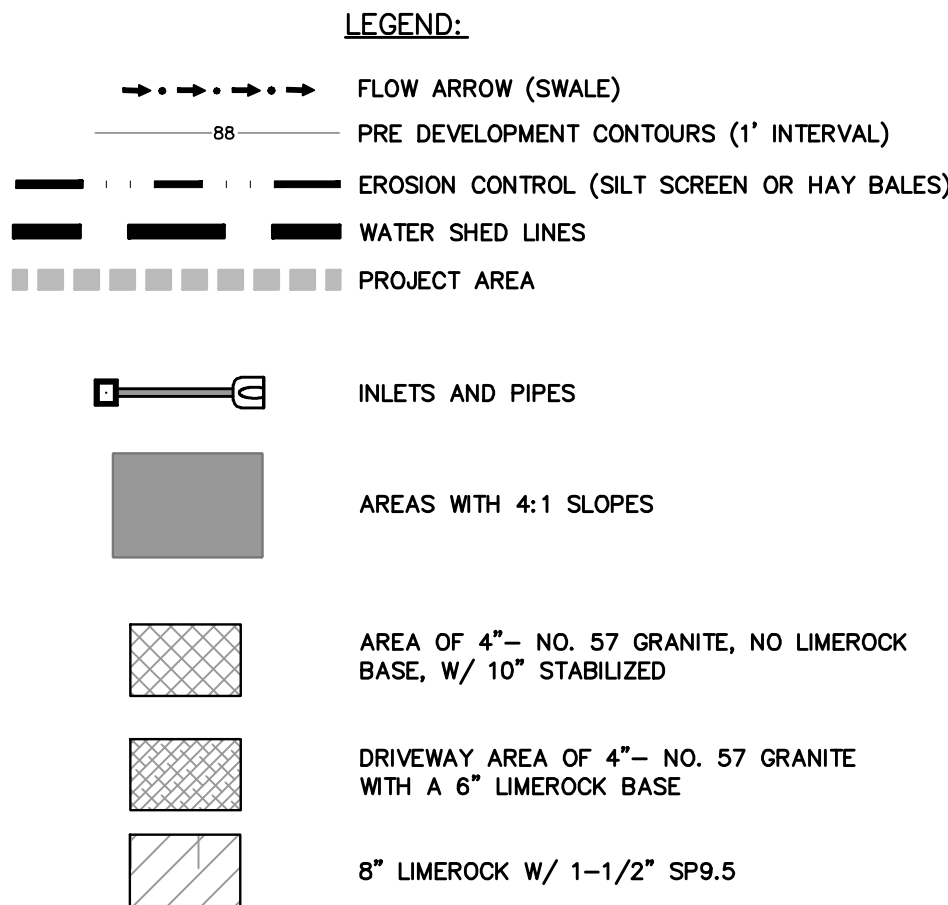
NOTES:
1. CONTRACTOR IS REQUIRED TO PREVENT ANY SEDIMENT TRANSPORT FROM THE PROJECT SITE ON TO ADJACENT PROPERTY. INSTALLATION OF EITHER SYNTHETIC HAY OR FABRIC FENCE TYPE SILT BARRIER IS ACCEPTABLE. THE BARRIER MUST REMAIN IN PLACE UNTIL UPLAND VEGETATION IS ESTABLISHED.
2. BEFORE REMOVING SILT BARRIER, CONTRACTOR SHALL COLLECT AND DISPOSE OF ANY ACCUMULATED SILT.
3. CONTRACTOR SHALL FOLLOW THE FLORIDA STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL DATED JULY, 2008.
PERIMETER EROSION AND SEDIMENT CONTROL
N.T.S.

GENERAL NOTES

- A SOIL TRACKING PREVENTION DEVICE (STPD) SHALL BE CONSTRUCTED AT LOCATIONS DESIGNATED BY THE ENGINEER FOR POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFFSITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE CONSTRUCTION PROJECT SHALL BE DIRECTED THRU A STPD. BARRIERS, FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE STPD.
- THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TECHNIQUE TO MINIMIZE OFFSITE TRACKING OF SEDIMENT. THE ALTERNATIVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ITS USE.
- ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STPD AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECT BY THE ENGINEER.
- AGGREGATES SHALL BE AS DESCRIBED IN SECTION 801 EXCLUDING 801-2.3. AGGREGATES SHALL BE FDOT SIZE #1. IF THIS SIZE IS NOT AVAILABLE, THE NEXT AVAILABLE SMALLER SIZE AGGREGATE MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER. SIZES CONTAINING EXCESSIVE SMALL AGGREGATE WILL TRACK OFF THE PROJECT AND ARE UNSUITABLE.
- THE SEDIMENT PIT SHOULD PROVIDE A RETENTION VOLUME OF 3600 CUBIC FEET/ACRE OF SURFACE AREA DRAINING TO THE PIT. WHEN THE STPD IS ISOLATED FROM OTHER DRAINAGE AREAS, THE FOLLOWING PIT VOLUMES WILL SATISFY THIS REQUIREMENT:
15'-50' = 100 Y²
50'-60' = 200 Y²
AS AN OPTION TO THE SEDIMENT PIT, THE WIDTH OF THE SWALE BOTTOM CAN BE INCREASED TO OBTAIN THE VOLUME. WHEN THE SEDIMENT PIT OR SWALE VOLUME HAS BEEN REDUCED TO ONE HALF, IT SHALL BE CLEANED. WHEN A SWALE IS USED, HAY BALES OR SILT FENCE SHALL BE PLACED ALONG THE ENTIRE LENGTH.
- THE SWALE DITCH DRAINING THE STPD SHALL HAVE A 0.2% MINIMUM AND A 1.0% MAXIMUM GRADE ALONG THE STPD AND TO THE SEDIMENT PIT.
- MITERED END SECTIONS ARE NOT REQUIRED WHEN THE SIDEDRAIN PIPE SATISFIES THE CLEAR ZONE REQUIREMENTS.
- THE STPD SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION. TO PREVENT OFFSITE TRACKING, THE STPD SHALL BE RINSED (DAILY WHEN IN USE) TO MOVE ACCUMULATED MUD DOWNWARD THRU THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE STPD MAY BE REQUIRED TO LIMIT THE MUD TRACKED.
- A STPD SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR SOIL TRACKING PREVENTION DEVICE, EX. THE UNIT PRICE SHALL CONSTITUTE FULL COMPENSATION FOR CONSTRUCTION, MAINTENANCE, REPLACEMENT OF MATERIALS, REMOVAL, AND RESTORATION OF THE AREA UTILIZED FOR THE STPD, INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING, TEMPORARY PIPE (INCLUDING MES WHEN REQUIRED), FILTER FABRIC, AGGREGATE, PAVED TURNOUT (INCLUDING ASPHALT AND BASE CONSTRUCTION), DITCH STABILIZATION, APPROACH ROUTE STABILIZATION, SEDIMENT REMOVAL AND DISPOSAL, WATER, RINSING AND CLEANING OF THE STPD AND CLEANING OF PUBLIC ROADS, GRASSING AND SOIL. HAY BALES SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR HAY OR STRAW BALLED, EX. SILT FENCE SHALL BE PAID FOR UNDER THE CONTRACT UNIT FOR STAKED SILT FENCE, IF.
- THE NOMINAL SIZE OF A STANDARD STPD IS 15'x50' UNLESS OTHERWISE SHOWN IN THE PLANS. IF THE VOLUME OF ENTERING AND EXITING VEHICLES WARRANT A 30' WIDTH STPD MAY BE USED IF APPROVED BY THE ENGINEER. WHEN A DOUBLE WIDTH (30') STPD IS USED, THE PAY QUANTITY SHALL BE 2 FOR EACH LOCATION.



SOIL TRACKING PREVENTION DEVICE -- TYPE A
N.T.S.
(FDOT INDEX NO. 106)



NOTES:

- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL, IN ACCORDANCE WITH SECTION 403.0885, FLORIDA STATUTES (F.S.), PREPARE AND SUBMIT A NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (RULE 62-621.300(4), FAC), MORE COMMONLY KNOWN AS AN NPDES-NOL. THE CONTRACTOR SHALL BE THE APPLICANT AND RESPONSIBLE AUTHORITY. THE CONTRACTOR SHALL EMPLOY AND MAKE AVAILABLE TO THIS PROJECT AN INDIVIDUAL WHO IS LAWFULLY CAPABLE OF ACTING AS THE RESPONSIBLE AUTHORITY.
- THE CONTRACTOR SHALL ALSO REVIEW AND BE FAMILIAR WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THIS PROJECT. COPIES OF THIS DOCUMENT SIGNED BY THE CONTRACTOR SHALL BE PROVIDED TO THE OWNER PRIOR TO COMMENCEMENT OF CONSTRUCTION. SHOULD THE EROSION CONTROL METHODS CHANGE AND NEW OR ADDITIONAL CONTRACTORS BE ADDED TO THE PROJECT THE CONTRACTOR SHALL BE RESPONSIBLE FOR AMENDING THE SWPPP AND HAVING NEW CONTRACTORS SIGN THE SWPPP. COPIES OF THE AMENDED SWPPP SHALL BE ATTACHED TO THE ORIGINAL SWPPP AND A COPY PROVIDED TO THE OWNER AND ANOTHER COPY KEPT ON SITE. IF A SWPPP HAS NOT BEEN PREPARED FOR THIS PROJECT, THE CONTRACTOR SHALL PREPARE IT.
- DURING CONSTRUCTION THE CONTRACTOR SHALL PERFORM THE MONITORING, INSPECTIONS AND PREPARE INSPECTION REPORTS IN CONFORMANCE WITH THE ABOVE STATUTE. THIS SHALL INCLUDE WEEKLY INSPECTIONS OR INSPECTIONS WITHIN 24 HOURS OF A RAIN EVENT OF 0.50 INCHES OR LARGER AND COMPLETION OF THE NPDES INSPECTION FORM (COPY INCLUDED AT THE END OF THE SWPPP) AND AT THE CONCLUSION OF CONSTRUCTION. AT THE END OF CONSTRUCTION THE CONTRACTOR SHALL COMPLETE AND SUBMIT THE NOTICE OF TERMINATION (NOT).
- PRIOR TO EACH PAY REQUEST, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND OWNER COPIES OF ALL DOCUMENTATION (INSPECTION REPORTS, AMENDED SWPPP, CORRESPONDENCE, ETC.) PERTAINING TO THIS REQUIREMENT. THE OWNER RESERVES THE RIGHT TO WITHHOLD OR REDUCE ANY PAY REQUESTS IF THESE DOCUMENTS ARE NOT PROPERLY PREPARED AND SUBMITTED. PRIOR TO THE APPROVAL OF FINAL PAYMENT, THE CONTRACTOR SHALL SUBMIT ALL AND ANY REMAINING DOCUMENTATION TO THE ENGINEER AND OWNER PERTAINING TO THE REQUIREMENT. THIS SHALL INCLUDE COPIES OF THE NOT.
- THE NATURE OF THIS PROJECT IS AN UPGRADE TO AN EXISTING ELECTRIC SUBSTATION. THE CONTRACTOR SHALL INSTALL ALL SILT FENCE/EROSION CONTROL MEASURES BEFORE BEGINNING CLEARING OR GRUBBING OPERATIONS.
- THE CONTRACTOR SHALL INSTALL ALL SILT FENCE/EROSION CONTROL MEASURES BEFORE BEGINNING CLEARING OR GRUBBING OPERATIONS.
- THE AREA OF THIS SITE THAT IS TO UNDERGO EXCAVATION IS 2.89 AC.
- THE CONTRIBUTING AREA TO THE SINGLE ONLINE DRA IS 2.09 AC.
- THE POST DEVELOPMENT RUNOFF COEFFICIENTS OF THIS SITE ARE AS FOLLOWS:
D.R.A. #A = **74.59**
- ACCORDING TO THE SUMTER COUNTY NRCS SOIL SURVEY, THE SOIL TYPES FOUND ON THIS SITE ARE CANDLER SAND (4), MILLHOPPER SAND (11), 0 TO 5 PERCENT SLOPES AND OKEELANTA MUCK (18).
- THIS SITE WAS DESIGNED TO CONTROL STORM WATER RUNOFF FOR A 25 YR., 24 HOUR STORM WHICH CONSISTS OF **6.5** INCHES OF RAINFALL.
- STABILIZATION WILL OCCUR IN ALL AREAS.
- CONTRACTOR TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES UNTIL CONSTRUCTION IS COMPLETE.
- EROSION CONTROL SHOWN OUTSIDE THE PROPERTY LINE FOR CLARITY PURPOSES ONLY. EROSION CONTROL TO BE INSTALLED ON OR WITHIN PROPERTY BOUNDARY.
- CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WINDBORNE SEDIMENT TRANSPORT. SHOULD DRY WINDY CONDITIONS OCCUR DURING CONSTRUCTION THAT CREATE THE POTENTIAL FOR WINDBORNE SEDIMENT TRANSPORT, THE CONTRACTOR SHALL TAKE NECESSARY STEPS TO MINIMIZE ADVERSE EFFECTS, INCLUDING PROVIDING WATER FOR SEDIMENT CONTROL AND/OR TEMPORARY SODDING.
- IF CONSTRUCTION ACTIVITY CEASES FOR MORE THAN SEVEN DAYS THE CONTRACTOR SHALL STABILIZE THE AREA WITH SEED OR SOD.
- THE SOIL TRACKING DEVICE SHALL BE INSTALLED IF, IN THE OPINION OF THE ENGINEER, PERMITTING AGENCY, OR OWNER, SOIL TRACKING BECOMES A PROBLEM.

STATE AND LOCAL PERMITTING REQUIRED FROM:		YES	NO
LOCAL	SUMTER COUNTY	✓	
F.D.E.P.		✓	
F.D.O.T.		✓	

KEN FRINK, P.E.
REG. ENGINEER NO. 47750
STATE OF FLORIDA
DATE

BEI
BURRELL
ENGINEERING, INC.
CIVIL ENGINEERING CA No. 7973

12005 N. FLORIDA AVE DUNNELLON, FL 34434 PH. 352-489-4144 FAX 352-489-4741
BEI JOB NO. 09-53, FILE NO. K-10, DRAWING NO. Bose 09-53, LAYOUT

Revision:	BY:	Date:
1. REVISED PER FDEP COMMENTS	K.F.	4/28/10
2. REVISED PER COUNTY COMMENTS	K.F.	7/12/10

Drawn by:
DFS
Scale
NTS

Provided by:
SECO
SUMTERVILLE, FLORIDA
FLORIDA 16 SUMTER

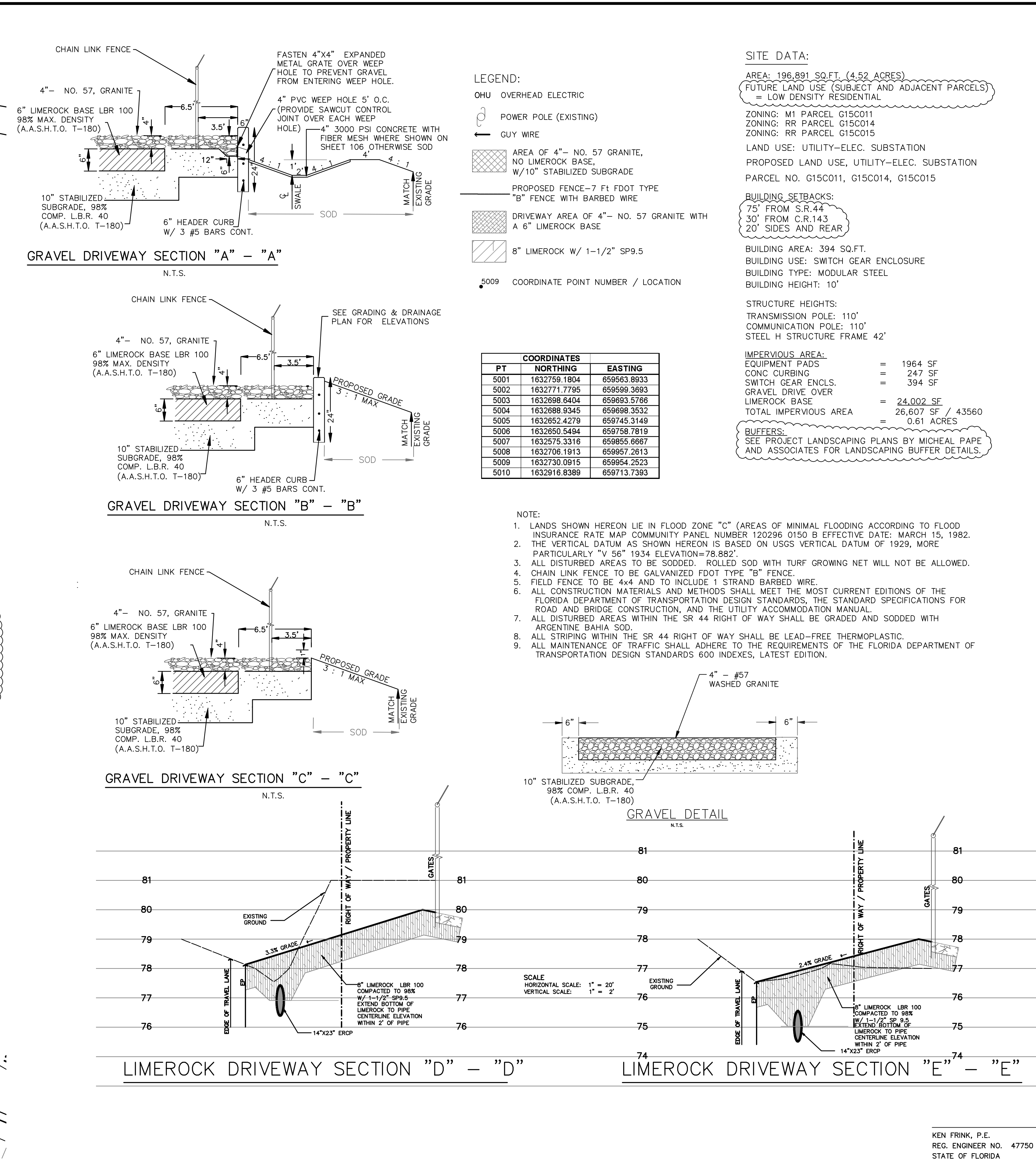


Approved Date
03/19/10
Approved By
K. RODRIQUE

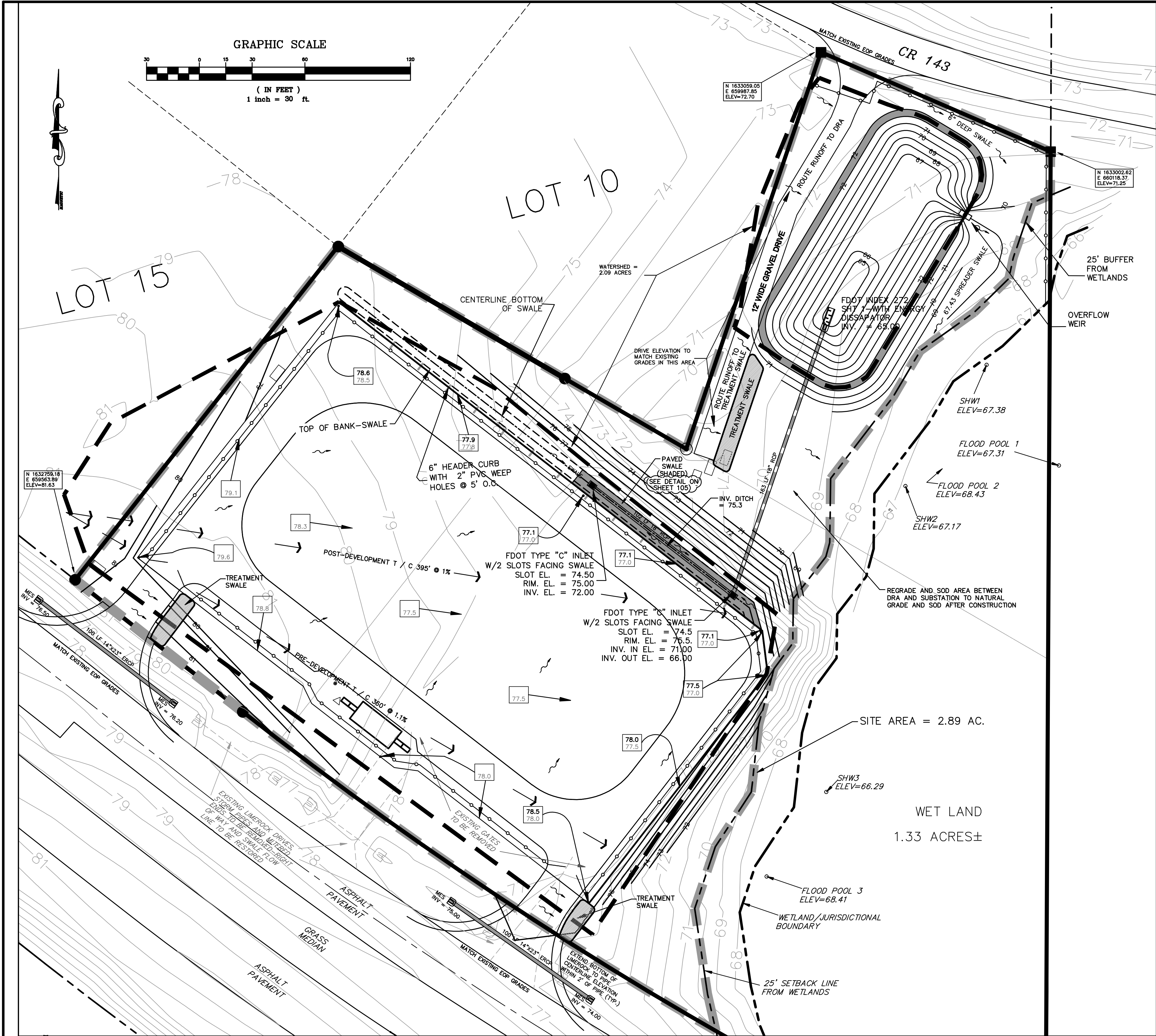
Date
MARCH 2010
Engineer
KEN FRINK

CONTINENTAL SUBSTATION
CIVIL INFORMATION
SURFACE WATER POLLUTION
PREVENTION PLAN

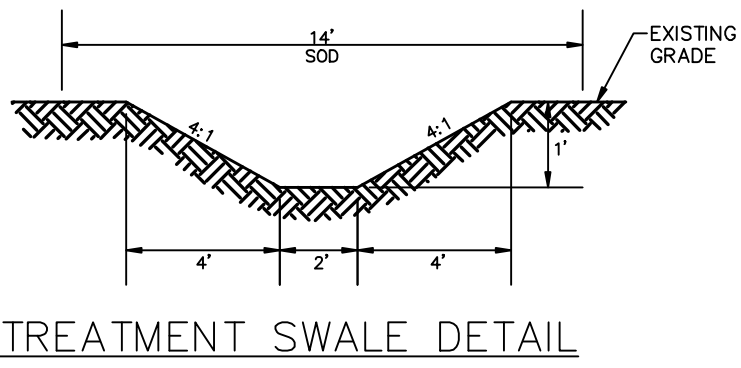
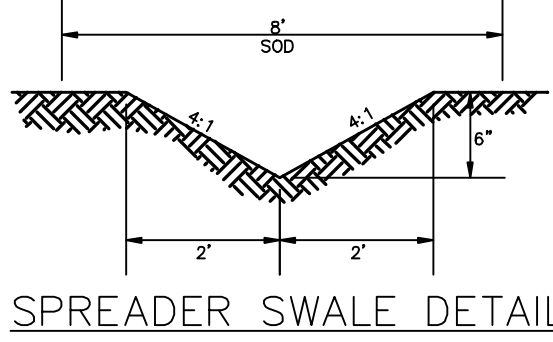
Work Order
900852
Drawing #
CO- 02 - 104



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- LEGEND:
- FLOW ARROW (DIRECTION OF FLOW)
 - PRE DEVELOPMENT CONTOURS (1' INTERVAL)
 - PROPOSED CONTOURS (1' INTERVAL)
 - PROPOSED GRADES / CURB = GRADE AT TOP OF GRAVEL SURFACE GRAVE = GRADE AT TOP OF GRAVEL SURFACE
 - WATER SHED LINES
 - MITERED END WITH ENERGY DISSIPATOR
 - FDOT MITERED END
 - INLETS AND PIPES
 - T/C PATH
 - T/C TIME OF CONCENTRATION
 - PROPERTY LINE
 - SITE AREA



BURRELL
ENGINEERING, INC.
CIVIL ENGINEERING CA No. 7973

12005 N. FLORIDA AVE DUNNELLON, FL 34434 PH. 352-489-4144 FAX 352-489-4741
BEI JOB NO. 09-53, FILE NO. K-10, DRAWING NO. Bose 09-53, LAYOUT

Revision:	BY:	Date:
1. REVISED PER FDEP COMMENTS	K.F.	4/28/10
2. REVISED PER COUNTY COMMENTS	K.F.	7/12/10

Drawn by:
DFS
Scale
NTS

Provided by:
SECO
SUNTERVILLE, FLORIDA 16 SUMTER

Approved Date
03/19/10
Approved By
K. RODRIQUE

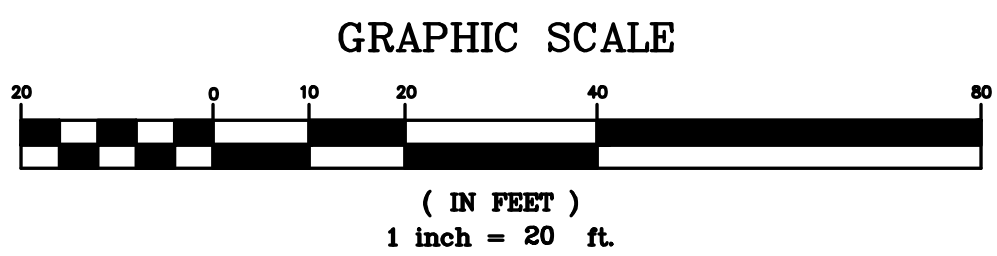
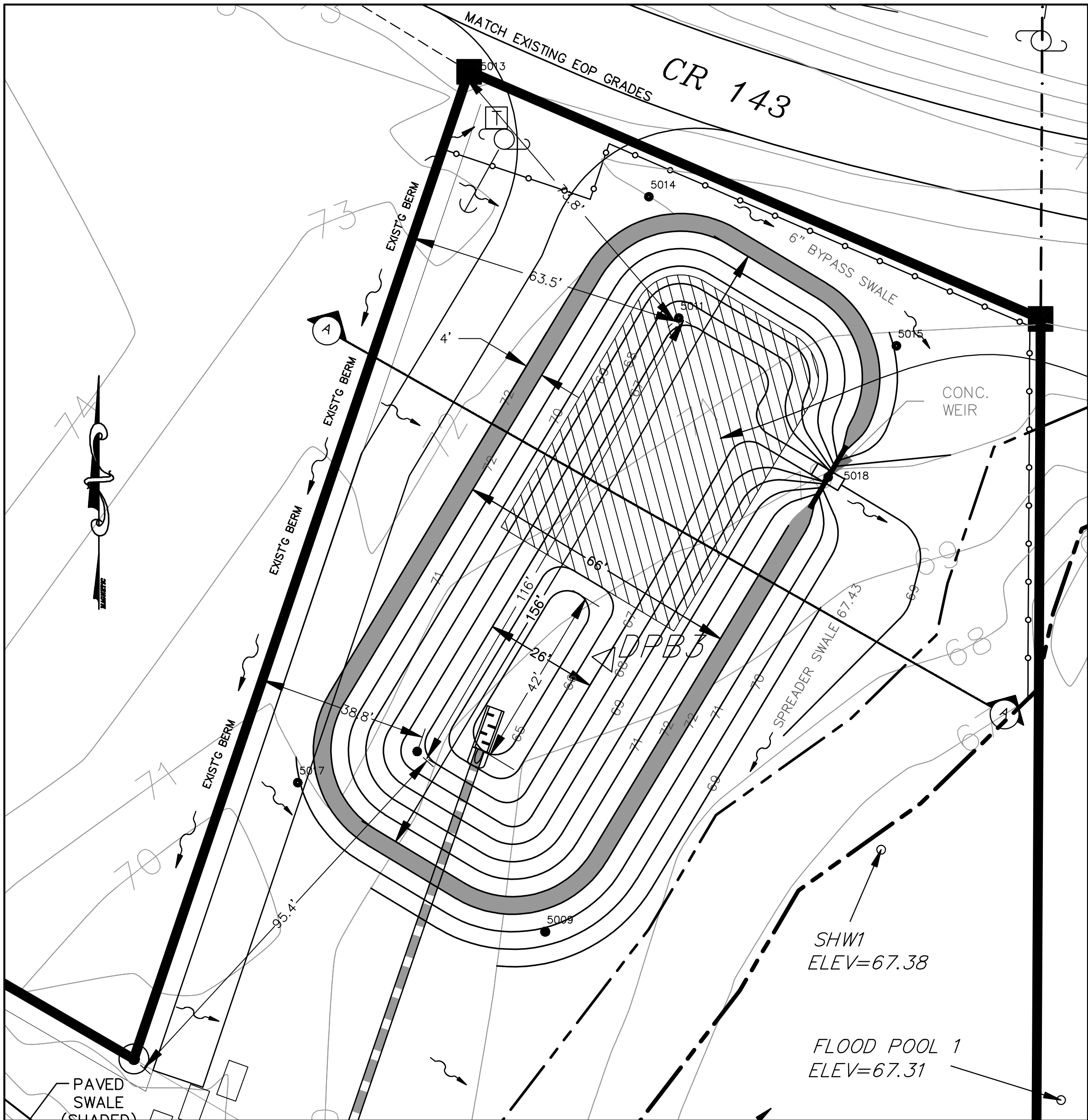
Date
MARCH 2010
Engineer
KEN FRINK

**CONTINENTAL SUBSTATION
CIVIL INFORMATION
GRADING & DRAINAGE
PLAN**

Work Order
900852
Drawing #
CO- 02 - 106

KEN FRINK, P.E.
REG. ENGINEER NO. 47750
STATE OF FLORIDA
DATE

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DRA DETAIL

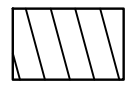
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5014	1633030.5271	660028.8941
5015	1632996.4773	660085.4188
5016	1632862.6813	660005.2351
5017	1632896.7111	659948.7105
5018	1632966.4937	660069.8430



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BEI JOB NO. 09-53, FILE NO. K-10, DRAWING NO. Bose 09-53, LAYOUT CO-02-104

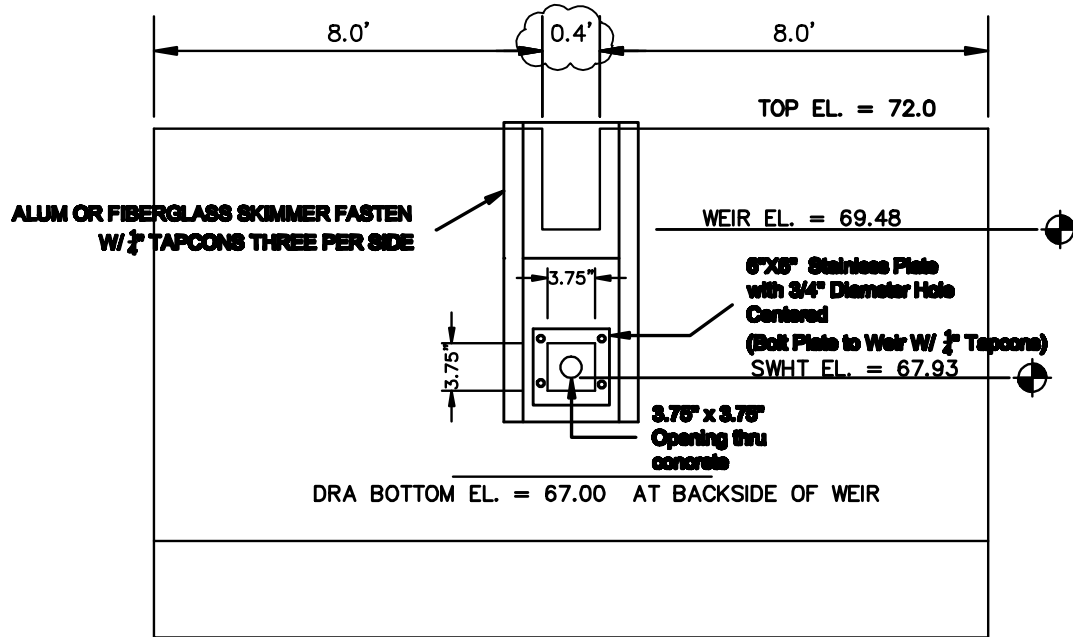
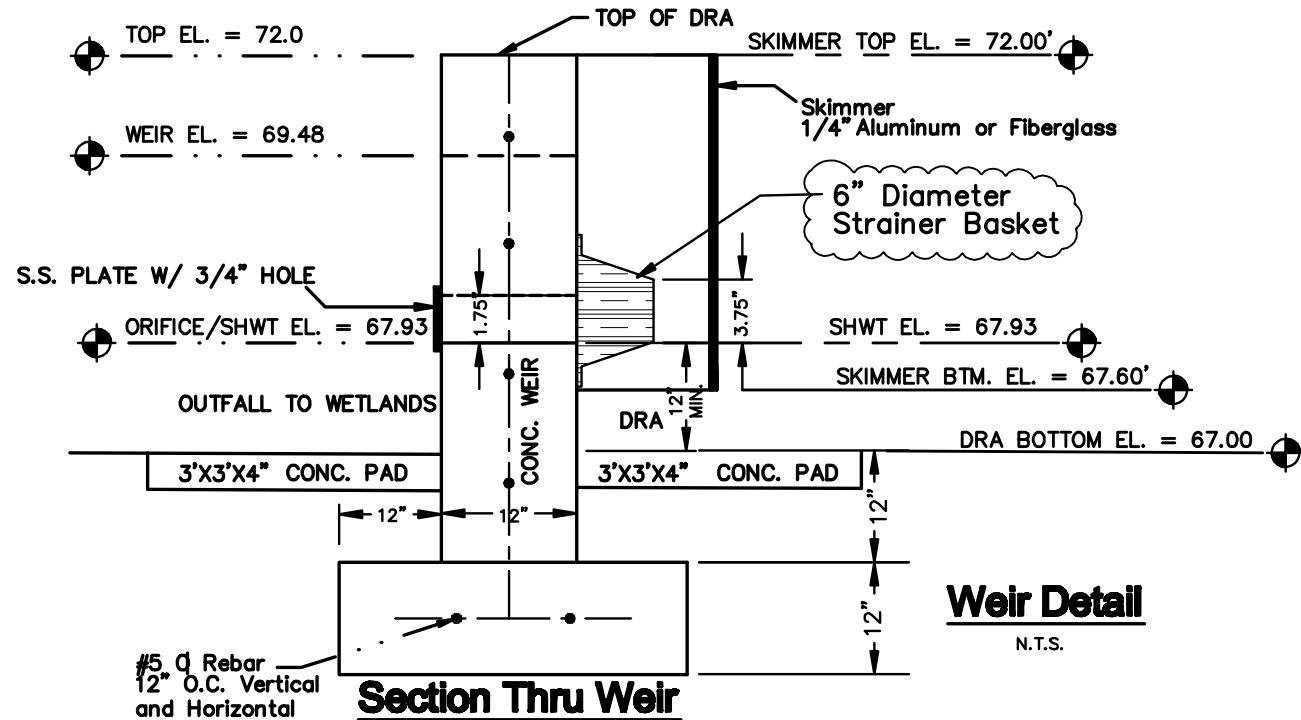
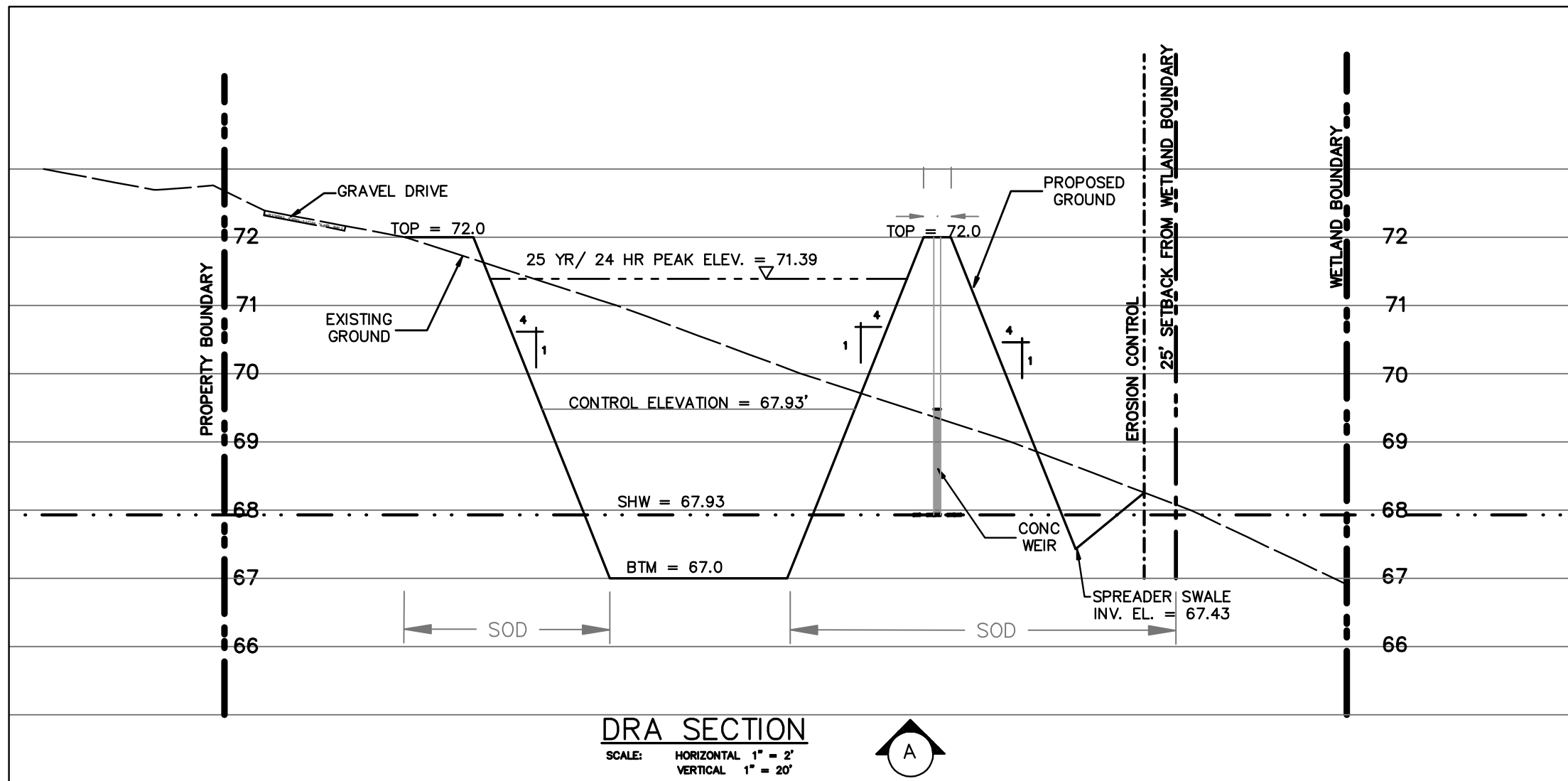
LEGEND:



INDICATES LITTORAL SHELF

LITTORAL SHELF
= 2,640 SF

LITTORAL SHELF REQUIRED:
35% OF AREA OF CONTROL ELEVATION
3484 X 0.35 = 1219
LITTORAL SHELF PROVIDED:
2640 SF



CONC. WEIR DETAIL

SCALE: N.T.S.

THE FOLLOWING NORMAL MAINTENANCE ITEMS, INCLUDING CLEANING OR REPLACEMENT OF THE VARIOUS ELEMENTS OF THE SYSTEM, WILL BE REQUIRED FOR THE SURFACE WATER MANAGEMENT SYSTEM TO CONTINUE TO OPERATE AS DESIGNED.

GENERAL MAINTENANCE

1. ALL SURFACE WATER MANAGEMENT SYSTEM PIPES, INLETS, CATCH BASINS, MANHOLES, FLUMES, POND INFLOW AND OUTFALL STRUCTURES (INCLUDING OIL SKIMMERS), AND DISCHARGE PIPES SHALL BE INSPECTED ON A REGULAR BASIS (MONTHLY OR QUARTERLY) AND FOLLOWING SIGNIFICANT STORM EVENTS. THEY SHOULD BE MAINTAINED BY REMOVING BUILT-UP DEBRIS AND VEGETATION AND REPAIRING DETERIORATING STRUCTURES.
2. CHEMICALS, OILS, GREASES OR SIMILAR WASTES ARE NOT TO BE DISPOSED OF IN THE SURFACE WATER MANAGEMENT SYSTEM OR THROUGH STORM SEWERS. TREATMENT PONDS ARE DESIGNED TO TREAT NORMAL ROAD, PARKING LOT, ROOF AND YARD RUNOFF ONLY. SOME CHEMICALS MAY INTERFERE WITH A TREATMENT POND'S FUNCTIONS OR KILL VEGETATION AND WILDLIFE. DISPOSE OF THESE POTENTIALLY DANGEROUS MATERIALS PROPERLY BY TAKING THEM TO RECYCLING FACILITIES OR TO COLLECTION LOCATIONS SPONSORED BY MANY LOCAL GOVERNMENTS.

ALSO, DO NOT DISPOSE OF GRASS CLIPPINGS IN A SURFACE WATER MANAGEMENT SYSTEM. GRASS CLIPPINGS POSE PROBLEMS BY SMOTHERING DESIRABLE VEGETATION, CLOGGING OUTFALL STRUCTURES AND, WHEN THEY DECOMPOSE, MAY CAUSE UNSIGHTLY ALGAE BLOOMS THAT CAN KILL FISH.

3. ACCUMULATED POND SEDIMENTS MAY CONTAIN HEAVY METALS SUCH AS LEAD, CADMIUM AND MERCURY, AS WELL AS OTHER POTENTIALLY HAZARDOUS MATERIALS. THEREFORE, SEDIMENTS REMOVED FROM SURFACE WATER MANAGEMENT SYSTEM INLETS, PIPES AND PONDS SHALL BE DISPOSED OF AT AN APPROVED FACILITY (CHECK WITH YOUR COUNTY SOLID WASTE DEPARTMENT OR THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR DISPOSAL FACILITIES APPROVED TO ACCEPT TREATMENT POND SEDIMENT).

4. AVOID CAUSING EROSION OR SILTATION TO ADJACENT OR OFF-SITE AREAS DURING ANY REPAIR OR MAINTENANCE ACTIVITY.

5. ALTERATIONS (FILLING, ENLARGING, ETC.) OF ANY PART OF THE SURFACE WATER MANAGEMENT SYSTEM ARE NOT PERMITTED WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT AND ALL OTHER APPLICABLE GOVERNING AGENCIES.

6. MOSQUITO GROWTH CAN BE MINIMIZED IN A SURFACE WATER MANAGEMENT SYSTEM BY THE FOLLOWING MEASURES:

DO NOT DUMP GRASS CLIPPINGS OR OTHER ORGANIC DEBRIS INTO A SURFACE WATER MANAGEMENT SYSTEM — DECAYING GRASS CLIPPINGS AND OTHER DECOMPOSING VEGETATION CREATE IDEAL CONDITIONS FOR BREEDING MOSQUITOES.

CLEAN OUT ANY OBSTRUCTIONS THAT GET INTO THE SYSTEM. DEBRIS CAN OBSTRUCT FLOW AND HARBOR MOSQUITO EGGS AND LARVAE.

REMOVE WATER LETTUCE AND WATER HYACINTH, WHICH NOURISH AND SHELTER MOSQUITO LARVAE.

STOCK PONDS WITH PREDATORY "MOSQUITO FISH" — GAMBUSIA MINNOWS, WHICH MAY BE COLLECTED FROM OTHER PONDS AND DITCHES AND INTRODUCED INTO YOUR SWMS.

WET DETENTION POND

1. THE SIDE SLOPES THE DETENTION PONDS AND CONNECTING SWALES SHALL BE INSPECTED FOR BARE SPOTS, DAMAGE OR EROSION. BARE AREAS SHALL BE SODDED OR SEEDED TO REPLACE THE GRASS COVER. IN THE CASE OF EROSION, REPLACE THE MISSING SOIL AND BRING THE AFFECTED AREAS BACK TO GRADE.

2. MAINTAIN, RATHER THAN REMOVE, WETLAND VEGETATION THAT BECOMES ESTABLISHED IN THE LITTORAL ZONE. DO NOT CUT, MOW, USE HERBICIDE OR GRASS CARP TO REMOVE ANY OF THE VEGETATION IN THE LITTORAL ZONE.

3. THE 1/4-INCH CONTROL ORIFICE IS SMALL AND VULNERABLE TO CLOGGING. ON A QUARTERLY OR AS-NEEDED BASIS, AND FOLLOWING SIGNIFICANT STORM EVENTS, INSPECT THE AREA IN FRONT OF THE MAY OUTFALL CONTROL STRUCTURES AND REMOVE BUILT-UP SEDIMENTS, VEGETATION, AND DEBRIS THAT IMPAIR THE OPERATION OF THE STRUCTURE.

4. ON A QUARTERLY OR AS-NEEDED BASIS, AND FOLLOWING SIGNIFICANT STORM EVENTS, INSPECT THE INLET STRUCTURES AND REMOVE BUILT-UP SEDIMENTS, VEGETATION, AND DEBRIS THAT MAY IMPAIR THE OPERATION OF THE STORM WATER CONVEYANCE SYSTEM.

5. WHEN LITTORAL ZONE VEGETATION AND SEDIMENT ACCUMULATE TO SUCH AN EXTENT THAT WATER DEPTH DECREASES, THE LITTORAL ZONE MAY NEED TO BE RE-GRADED AND RE-VEGETATED. WHEN IT APPEARS THAT THE POND HAS REACHED THIS STATE, CONTACT THE DEPARTMENT PRIOR TO LARGE SCALE MAINTENANCE.

6. NOTIFY THE DEPARTMENT AT (813) 632-7600 WITHIN TWENTY-FOUR HOURS OF OBSERVATION OF SINKHOLE DEVELOPMENT IN THE SURFACE WATER MANAGEMENT SYSTEM. REFERENCE PERMIT NUMBER 53-0271437-002.

KEN FRINK, P.E.
REG. ENGINEER NO. 47750
STATE OF FLORIDA
DATE

Work Order
900852

Drawing #

CO- 02 - 107

Revision:	BY:	Date:
1. REVISED PER FDEP COMMENTS	K.F.	4/28/10
2. REVISED ELEV. BTM SKIMMER, ADD EXIT'G BERM PER FDEP COMMENTS	D.F.S.	6/03/10
3. REVISED PER COUNTY COMMENTS	K.F.	7/12/10

Drawn by:
DFS
Scale
NTS

Provided by:



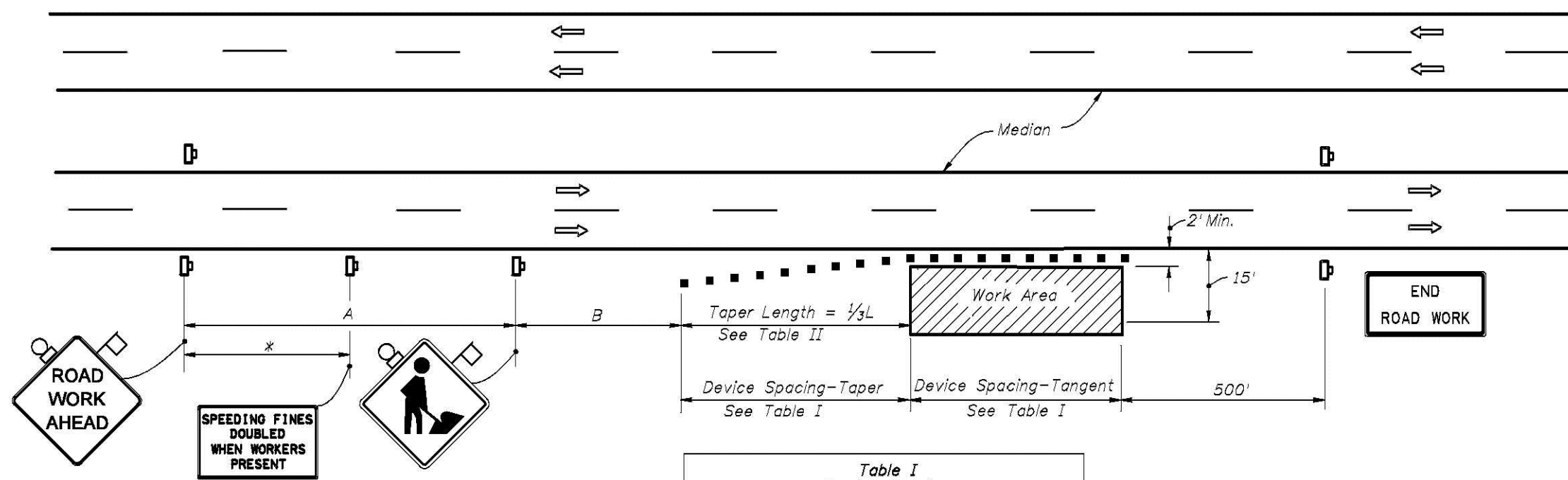
Approved Date
03/19/10

Approved By
K. RODRIQUE

Date
MARCH 2010

Engineer
KEN FRINK

CONTINENTAL SUBSTATION
CIVIL INFORMATION
DRA DETAILS



DISTANCE BETWEEN SIGNS		
Speed	Spacing (ft.)	
	A	B
40 mph or less	200	200
45 mph	350	350
50 mph or greater	500	500

* 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

Table I Device Spacing				
Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers	Barriers or Vertical Panels or Drums	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

Table II Taper Length - Shoulder				
Speed (mph)	1/2 L (ft.)			
	8' Shldr.	10' Shldr.	12' Shldr.	Notes
25	28	35	42	WS ²
30	40	50	60	
35	55	68	82	
40	72	90	107	
45	120	150	180	L=WS
50	133	167	200	
55	147	183	220	
60	160	200	240	
65	173	217	260	
70	187	233	280	

B' minimum shoulder width.

1/2 L = Length of shoulder taper in feet

W = Width of total shoulder in feet (combined paved and unpaved width)

S = Posted speed limit (mph)

GENERAL NOTES

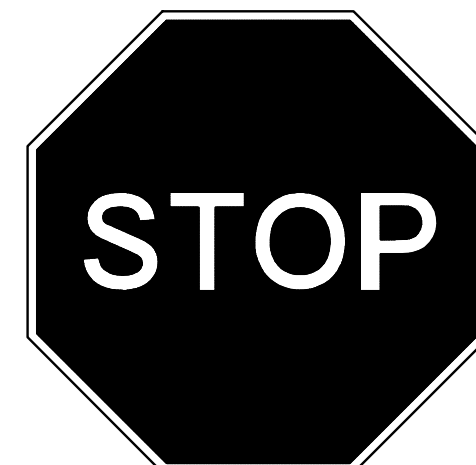
- If the work operation encroaches on the through traffic lanes or when four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area), a flagger shall be provided and a FLAGGER sign shall be substituted for the WORKERS sign. The flagger shall be positioned at the point of vehicle entry or departure from the work area.
- This TCD plan also applies to work performed in the median more than 2' but less than 15' from the edge of travelway.
- When work is being performed on a multi-lane undivided roadway the signs normally mounted in the median (as shown) shall be omitted.
- WORKERS signs to be removed or fully covered when no work is being performed.
- SHOULDER WORK sign may be used as an alternate to the WORKER sign.
- When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TTC indexes.
- For general TCD requirements and additional information, refer to Index No. 600.

DURATION NOTES

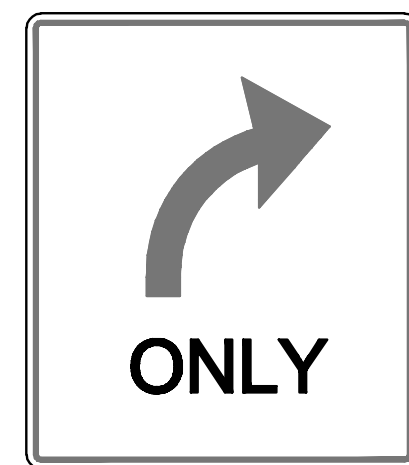
- Signs and channelizing devices may be omitted if all of the following conditions are met:
 - Work operations are 60 minutes or less.
 - Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENDOACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.



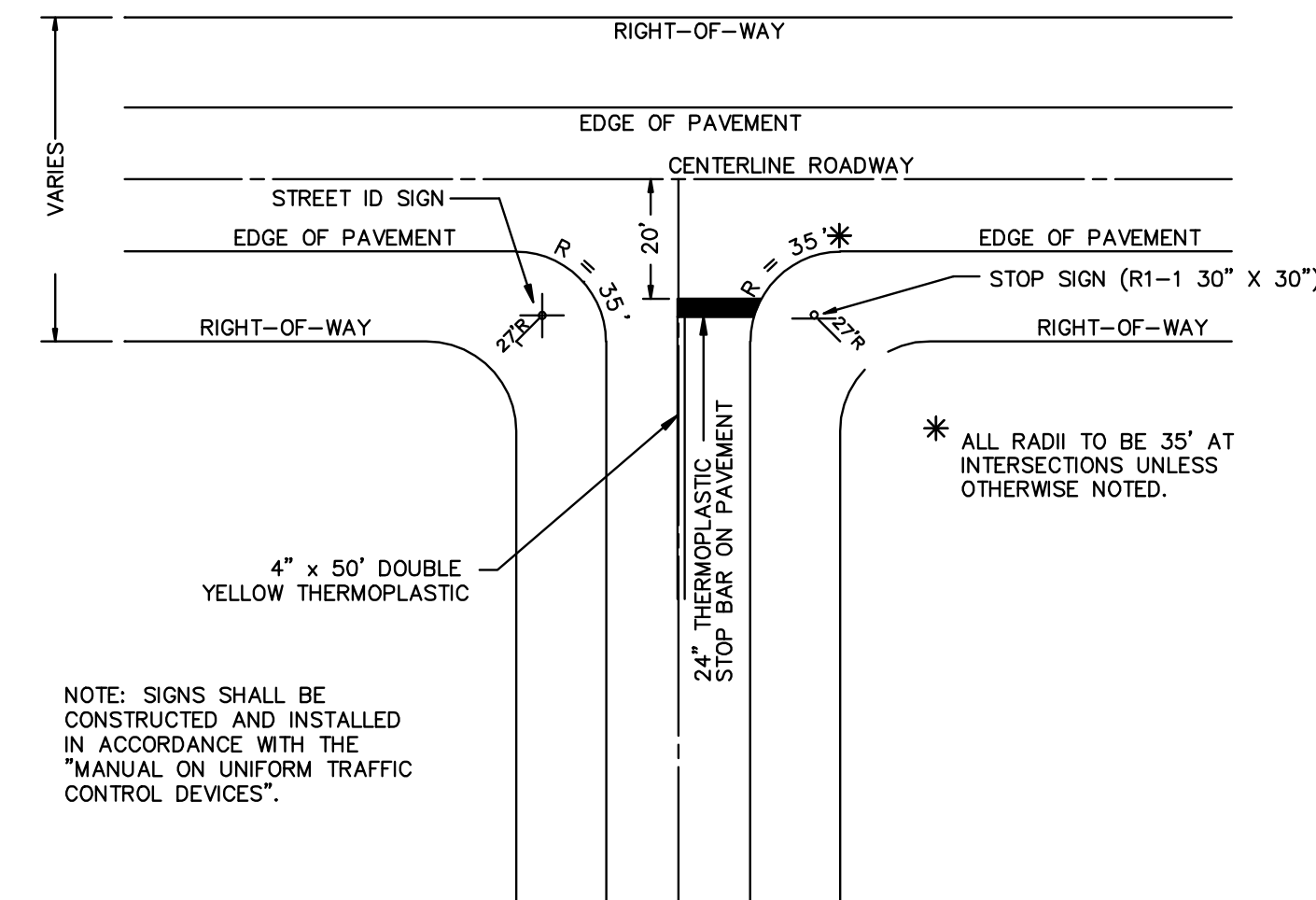
24"x24"
R1-1



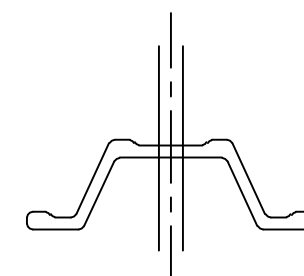
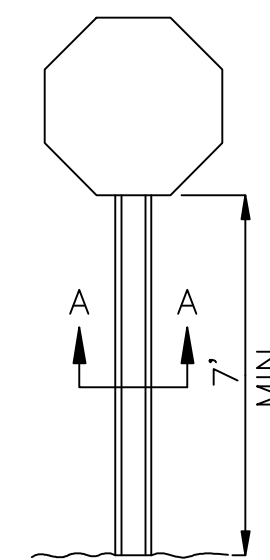
R3-5



R6-1

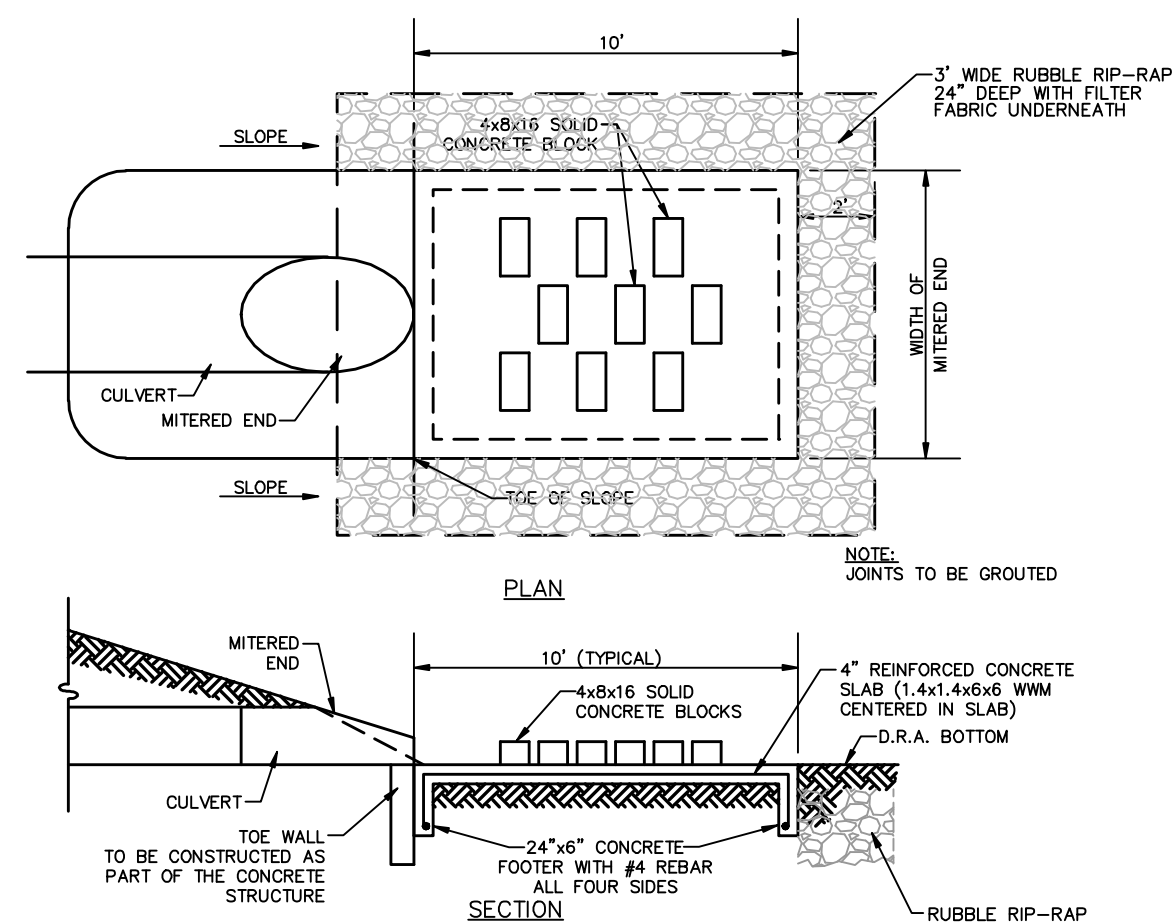


TYPICAL ROADWAY AND SIGN LOCATION DETAILS
NOT TO SCALE

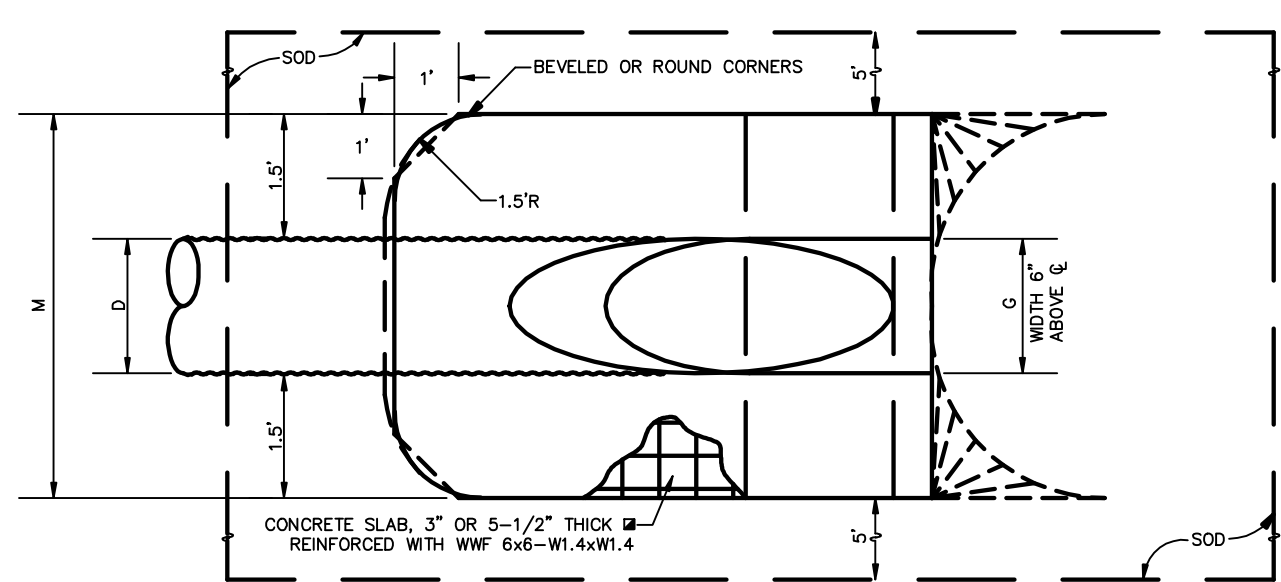


SECTION "A-A"
N.T.S.

TYPICAL TRAFFIC CONTROL SIGN
N.T.S.

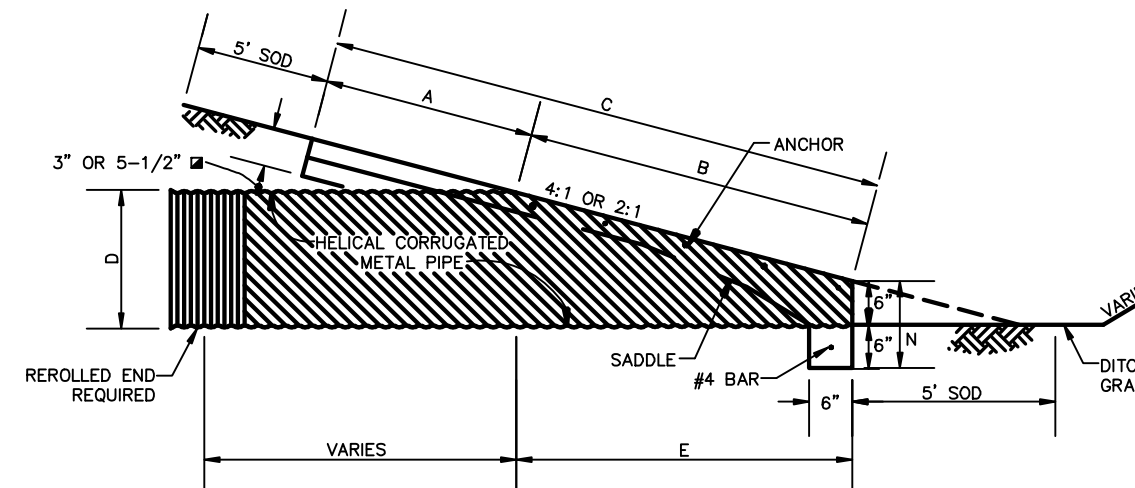


ENERGY DISSIPATOR
N.T.S.

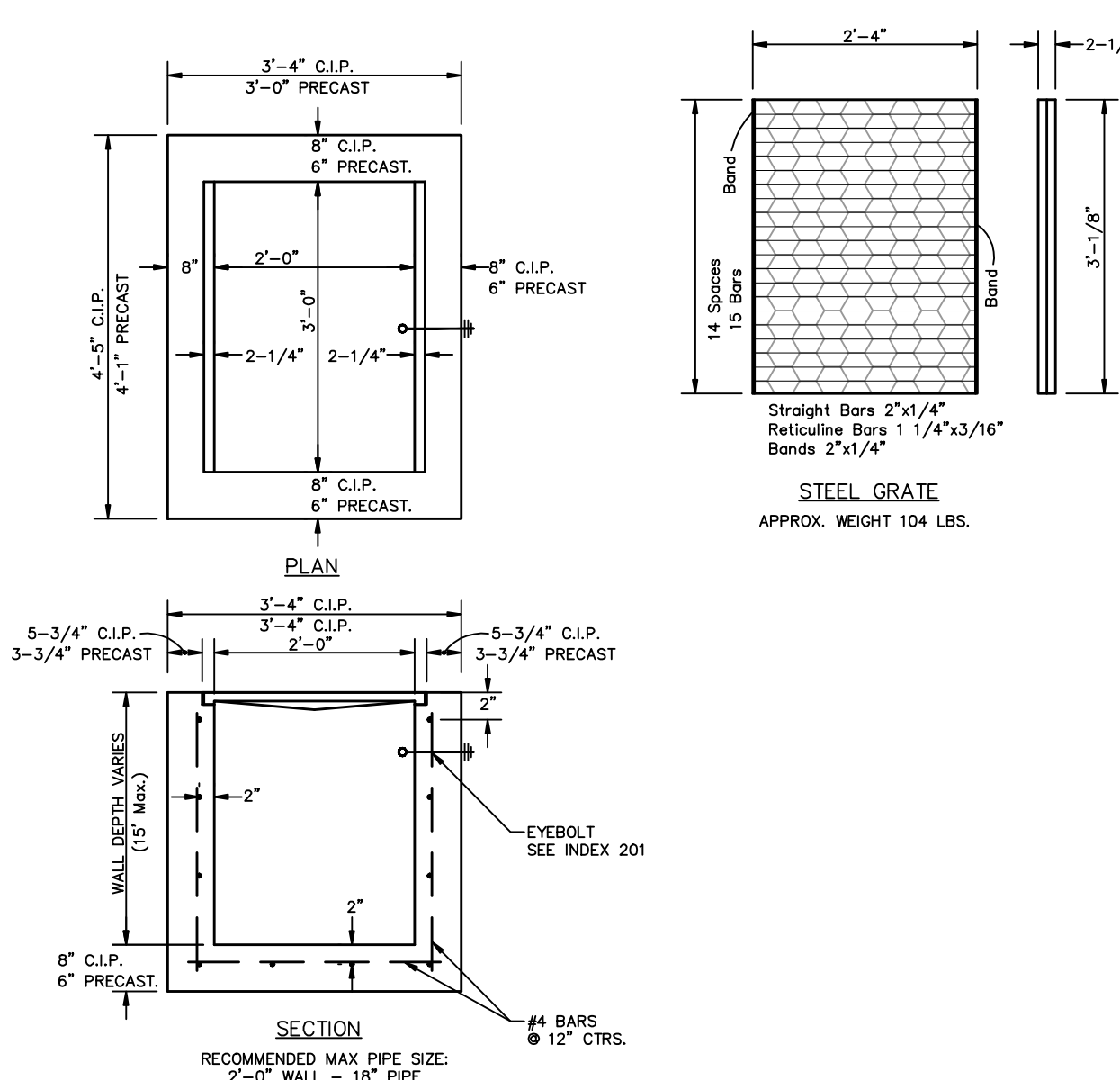


TOP VIEW - SINGLE PIPE

MITERED END DETAIL
N.T.S.



SECTION



DITCH BOTTOM
TYPE "C" INLET
FDOT INDEX 232
N.T.S.

DIMENSIONS AND QUANTITIES																					
	D	X	A	B	C	E	F	G	M				5'-1/2" CONCRETE SLAB (CVI #)				SODDING (50 YDS.)				
									Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	
2:1 SLOPE	18"	2'-7"	2'-5"	1.68'	4.18'	1.50'	5.00'	1.23'	4.33'	6.92'	9.50'	1.04'	0.35	0.54	0.74	0.94	21	24	27	29	
	18"	2'-10"	2'-5"	2.22'	4.74'	2.00'	6.00'	1.41'	4.58'	7.45'	10.25'	1.04'	0.38	0.62	0.87	1.12	22	25	28	31	
	24"	3'-5"	2'-5"	3.35'	5.85'	3.00'	7.00'	1.73'	5.08'	8.50'	11.92'	1.04'	0.47	0.76	1.05	1.34	23	27	31	35	
	30"	4'-5"	2'-5"	4.47'	6.97'	4.00'	8.00'	2.00'	5.58'	9.83'	14.08'	1.04'	0.57	0.96	1.37	1.77	25	30	35	39	
	36"	5'-1"	2'-5"	5.59'	8.09'	5.00'	9.00'	2.24'	6.08'	11.17'	16.23'	1.04'	0.67	1.19	1.72	2.26	27	33	38	44	
	42"	6'-5"	2'-5"	6.71'	9.21'	6.00'	10.00'	2.45'	6.58'	12.30'	18.48'	24.58'	1.04'	0.78	1.48	2.17	2.87	29	36	42	49
	48"	8'-5"	2'-5"	7.83'	10.33'	7.00'	11.00'	2.63'	7.08'	13.53'	20.58'	27.53'	1.04'	0.89	1.71	2.54	3.36	31	38	46	53
	54"	9'-5"	2'-5"	8.94'	11.44'	8.00'	12.00'	2.83'	7.58'	15.22'	22.92'	30.58'	1.04'	1.02	2.06	3.10	4.14	33	41	50	58
4:1 SLOPE	18"	2'-7"	2'-5"	3.09'	5.59'	3.00'	7.00'	1.23'	4.33'	6.92'	9.50'	1.04'	0.44	0.68	0.91	1.15	22	25	28	31	
	18"	2'-10"	2'-5"	4.12'	6.62'	4.00'	8.00'	1.41'	4.58'	7.45'	10.25'	1.04'	0.49	0.77	1.03	1.31	24	27	30	33	
	24"	3'-5"	2'-5"	5.15'	7.65'	5.00'	9.00'	1.73'	5.08'	8.50'	11.92'	1.04'	0.62	1.09	1.36	1.77	27	30	34	38	
	30"	4'-5"	2'-5"	6.28'	8.78'	6.00'	10.00'	2.00'	5.58'	9.83'	14.08'	1.04'	0.81	1.34	1.80	2.44	29	34	39	44	
	36"	5'-1"	2'-5"	7.41'	9.91'	7.00'	11.00'	2.24'	6.08'	11.17'	16.23'	1.04'	0.97	1.68	2.41	3.14	32	38	44	49	
	42"	6'-5"	2'-5"	8.54'	11.04'	8.00'	12.00'	2.45'	6.58'	12.30'	18.48'	24.58'	1.04'	1.13	2.08	3.06	4.02	35	42	48	55
	48"	8'-5"	2'-5"	9.67'	12.17'	9.00'	13.00'	2.63'	7.08'	13.53'	20.58'	27.53'	1.04'	1.29	2.49	3.69	4.86	38	46	53	60
	54"	9'-5"	2'-5"	10.80'	13.28'	10.00'	14.00'	2.83'	7.58'	15.22'	22.92'	30.58'	1.04'	1.48	2.98	4.47	5.98	41	49	58	66

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BEI JOB NO. 09-53, FILE NO. K-10, DRAWING NO. Base 09-53, LAYOUT

Revision:
1. REVISED PER FDOT COMMENTS

BY: K.F. Date: 4/8/10

Drawn by: DFS

Provided by: BECO



Approved Date
03/19/10

Approved By
K. RODRIQUE

Date
MARCH 2010

Engineer
KEN FRINK

**CONTINENTAL SUBSTATION
CIVIL INFORMATION
DRAINAGE & SITE
DETAILS**

Work Order
900852

Drawing #
CO- 02 - 108

KEN FRINK, P.E.
REG. ENGINEER NO. 47750
STATE OF FLORIDA
DATE

SECTION 5

UTILITY EXCAVATION, TRENCHING AND BACKFILLING

1. GENERAL

THE PROVISIONS SET FORTH IN THIS SECTION SHALL BE APPLICABLE TO ALL UNDERGROUND WATER, SANITARY SEWER, AND STORM SEWER PIPING OR BURIED CONDUIT INSTALLATIONS, REGARDLESS OF LOCATION, UNLESS PRIOR APPROVAL IS RECEIVED FROM THE OWNER AND THE ENGINEER.

2. MATERIALS

A. SHEETING AND BRACING

- (1) WOOD SHEETING TO BE LEFT IN PLACE SHALL BE PRESSURE TREATED WITH PRESERVATIVE IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF THE AMERICAN WOOD PRESERVERS' ASSOCIATION MANUAL OF RECOMMENDED PRACTICE. THE CREOSOTE OIL USED SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST REVISION, WHEN TESTED IN ACCORDANCE WITH AASHTO T-60.
- (2) STEEL SHEETING TO BE LEFT IN PLACE SHALL BE AS SPECIFIED IN ASTM DESIGNATION A-328.

B. CONCRETE

- (1) REQUIRED CONCRETE FOR ANCHORS, THRUST BLOCKS, ENCASEMENTS OR PROTECTIVE SLABS SHALL HAVE A MINIMUM 2,500 POUNDS PER SQUARE INCH (P.S.I.) COMPRESSIVE STRENGTH.

3. WORKMANSHIP

A. CONSTRUCTION METHODS

(1) VERTICAL CLEARANCE AT CROSSINGS:

GRAVITY SEWERS OR FORCE MAINS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 FEET. THE TOP OF THE TRENCH, THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER AND WATER JOINTS WILL BE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN 10 FEET BETWEEN ANY TWO JOINTS. WHERE THE MINIMUM 18 IN. SEPARATION CANNOT BE OBTAINED, THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE FOR 20 FEET CENTERED ON THE POINT OF CROSSING.

WHERE THERE IS NO ALTERNATIVE TO SEWER PIPES CROSSING OVER WATER MAINS, THE PIPES SHALL BE CENTERED AT THE CROSSING AND THE TRENCH SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE FOR 20 FEET CENTERED ON THE POINT OF CROSSING. ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

(2) HORIZONTAL SEPARATION BETWEEN PARALLEL LINES:

GRAVITY SEWERS OR FORCE MAINS SHALL BE INSTALLED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED BY THE CENTERLINE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A 10 FT. SEPARATION, THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELVE LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, AND THE WATER AND SEWER JOINTS SHALL BE STAGGERED.

FORCE MAINS SHALL BE INSTALLED AT LEAST 10 FT. HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.

- (3) MINIMUM COVER OVER ALL PIPE SHALL BE 36" TO FINISH GRADE FROM TOP OF PIPE.

- (4) COMPLETE "AS-BUILT" INFORMATION RELATIVE TO LOCATION OF ALL VALVES, FITTINGS, MAINS AND SERVICES, SHALL BE ACCURATELY RECORDED ON FIELD DRAWINGS BY THE CONTRACTOR AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL INSPECTION OF WORK.

B. TRENCH DIMENSIONS

THE MINIMUM WIDTH OF THE TRENCH SHALL BE EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE AT THE JOINT PLUS EIGHT (8) INCHES FOR UNSHEETED TRENCH, OR TWELVE (12) INCHES FOR SHEETED TRENCH, AND THE MAXIMUM WIDTH OF TRENCH MEASURED AT THE TOP OF THE PIPE, SHALL NOT EXCEED THE OUTSIDE PIPE DIAMETER PLUS TWO (2) FEET, UNLESS OTHERWISE SHOWN ON DRAWING DETAILS OR APPROVED BY THE APPLICABLE REGULATORY AGENCY AND THE ENGINEER. TRENCH WALLS SHALL BE MAINTAINED VERTICAL FROM THE BOTTOM OF THE TRENCH TO A LINE MEASURED ABOVE (1) FOOT ABOVE THE TOP OF THE PIPE; FROM ONE (1) FOOT ABOVE THE TOP OF THE PIPE TO THE SURFACE, THE TRENCH WALLS SHALL BE APPROXIMATELY VERTICAL.

C. TRENCH GRADE

STANDARD TRENCH GRADE SHALL BE DEFINED AS THE BOTTOM SURFACE OF THE UTILITY TO BE CONSTRUCTED OR PLACED WITHIN THE TRENCH. TRENCH GRADE FOR UTILITIES IN ROCK OR OTHER NON-CUSHIONING MATERIAL SHALL BE DEFINED AS SIX (6) INCHES BELOW THE OUTSIDE OF THE BOTTOM OF THE UTILITY, WHICH SIX (6) INCHES SHALL BE BACKFILLED WITH EXTRA UTILITY BEDDING MATERIAL. EXCAVATION BELOW TRENCH GRADE THAT IS DONE IN ERROR SHALL BE BACKFILLED TO TRENCH GRADE AND COMPACTED.

D. UTILITY BEDDING

CLASS B (MINIMUM UTILITY BEDDING): THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO PROVIDE A FIRM BEDDING FOR THE UTILITY PIPE. THE UTILITY SHALL BE FIRMLY BEDDED IN UNDISTURBED FIRM SOIL OR HAND-SHAPED UNYIELDING MATERIAL. THE BEDDING SHALL BE SHAPED SO THAT THE PIPE WILL BE IN CONTINUOUS CONTACT THEREWITH FOR ITS FULL LENGTH AND SHALL PROVIDE A MINIMUM BOTTOM SEGMENT SUPPORT FOR THE PIPE EQUAL TO 0.6 OF THE OUTSIDE DIAMETER OF THE BARREL.

CLASS A (SPECIAL UTILITY BEDDING): SHOULD SPECIAL BEDDING BE REQUIRED, DUE TO DEPTH OF COVER, IMPACT LOADINGS, OR OTHER CONDITIONS, "CLASS A" BEDDING SHALL BE INSTALLED, CONSISTING OF SAND OR SUITABLE CRUSHED ROCK. "CLASS A" BEDDING SHALL RECEIVE PRIOR APPROVAL BY THE ENGINEER OR REGULATORY AGENCY.

E. UNSUITABLE MATERIAL BELOW TRENCH GRADE

SOIL UNSUITABLE FOR A PROPER FOUNDATION ENCOUNTERED AT OR BELOW TRENCH GRADE, SUCH AS MUCK OR OTHER DETERIORUS MATERIAL, SHALL BE REMOVED FOR THE FULL WIDTH OF THE TRENCH AND TO THE DEPTH REQUIRED TO PROVIDE A PROPER FOUNDATION MATERIAL. UNLESS SPECIAL DESIGN CONSIDERATIONS RECEIVE PRIOR APPROVAL FROM THE ENGINEER, MATERIALS FOUND BELOW TRENCH GRADE SHALL BE BACKFILLED WITH THE APPLICABLE PROVISIONS OF SUB-SECTION N, "BACKFILL", WITH MATERIAL AS SPECIFIED UNDER PARAGRAPHS N (1) AND N (2) OF THAT SECTION. BACKFILL LAYERS SHALL NOT EXCEED SIX (6) INCHES IN THICKNESS FOR THE FULL TRENCH WIDTH AND COMPACTION SHALL EQUAL NINETY-EIGHT (98) PERCENT OF MAXIMUM DENSITY, AS DETERMINED BY AASHTO SPECIFICATION T-180. COMPACTION DENSITY TESTS SHALL BE MADE AT ALL SUCH BACKFILL AREAS WITH SPACING NOT TO EXCEED FIFTY (50) FEET APART.

F. EXTRA UTILITY-BEDDING MATERIAL

WHEN ROCK OR OTHER NON-CUSHIONING MATERIAL IS ENCOUNTERED AT TRENCH GRADE, EXCAVATION SHALL BE EXTENDED TO SIX (6) INCHES BELOW THE OUTSIDE OF THE BOTTOM OF THE UTILITY, AND A CUSHION OF SAND OR SUITABLE CRUSHED ROCK SHALL BE PROVIDED. UTILITY-BEDDING MATERIAL SHALL BE AS SPECIFIED UNDER PARAGRAPH N (2).

G. SHEETING AND BRACING

IN ORDER TO PREVENT DAMAGE TO PROPERTY, INJURY TO PERSONS, EROSION, CAVE-INS, OR EXCESSIVE TRENCH WIDTHS, ADEQUATE SHEETING AND BRACING SHALL BE PROVIDED, AS REQUIRED, AND/OR DIRECTED BY THE APPLICABLE OWNER AND ENGINEER, IN ACCORDANCE WITH ACCEPTED STANDARD PRACTICE. SHEETING SHALL BE REMOVED WHEN THE TRENCH HAS BEEN BACKFILLED TO AT LEAST ONE-HALF (1/2) ITS DEPTH, OR WHEN REMOVAL WOULD NOT ENDANGER THE CONSTRUCTION OF ADJACENT STRUCTURES. WHEN REQUIRED, TO ELIMINATE EXCESSIVE TRENCH WIDTH OR OTHER DAMAGE, SHEETING, BRACING OR SHORING SHALL BE LEFT IN PLACE AND THE TOP CUT OFF AT AN ELEVATION OF 2.5 FEET BELOW FINISHED GRADE, UNLESS OTHERWISE DIRECTED.

H. EXCAVATED MATERIAL

EXCAVATED MATERIAL TO BE USED FOR BACKFILL SHALL BE NEATLY DEPOSITED AT THE SIDES OF THE TRENCHES WHERE SPACE IS AVAILABLE. WHERE STOCKPILING OF EXCAVATED MATERIAL IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE SITES TO BE USED AND SHALL MAINTAIN HIS OPERATIONS TO PROVIDE FOR NATURAL DRAINAGE AND NOT PRESENT AN UNSIGHTLY APPEARANCE.

I. MATERIAL DISPOSAL

EXCESS, UNSUITABLE, OR CLEARED AND GRUBBED MATERIAL, RESULTING FROM THE UTILITY EXCAVATION, SHALL BE IMMEDIATELY REMOVED FROM THE WORK SITE AND DISPOSED OF AT ONE OR MORE OF THE FOLLOWING METHODS: WELL POINT SYSTEM, SUMPS WITH PUMPS, OR OTHER METHOD(S) AS APPROVED BY THE OWNER AND ENGINEER. EXCESS MATERIAL SHALL BE UTILIZED IN ACCORDANCE WITH GOOD STANDARD PRACTICE AND MUST BE EFFICIENT ENOUGH TO LOWER THE WATER LEVEL IN ADVANCE OF THE EXCAVATION AND MAINTAIN IT CONTINUOUSLY TO KEEP THE TRENCH BOTTOM AND SIDES FIRM AND DRY. IF THE MATERIAL ENCOUNTERED AT TRENCH GRADE IS SUITABLE FOR THE PASSAGE OF WATER WITHOUT DESTROYING THE SIDES OR UTILITY FOUNDATION OF THE TRENCH, SUMPS MAY BE PROVIDED AT INTERVALS AT THE SIDE OF THE MAIN TRENCH EXCAVATION WITH PUMPS USED TO LOWER THE WATER LEVEL BY TAKING THEIR SUCTION FROM SAID PUMPS, DISCHARGE FROM DEWATERING SHALL BE DISPOSED OF IN SUCH A MANNER THAT IT WILL NOT INTERFERE WITH THE NORMAL DRAINAGE OF THE AREA IN WHICH THE WORK IS BEING PERFORMED, CREATE A PUBLIC NUISANCE, OR FORM PONDING.

J. BORROW

SHOULD THERE BE INSUFFICIENT SATISFACTORY MATERIAL FROM THE EXCAVATIONS TO MEET THE REQUIREMENTS FOR FILL MATERIAL, BORROW SHALL BE OBTAINED FROM PITS SECURED BY THE CONTRACTOR AND APPROVED BY THE OWNER AND THE ENGINEER.

K. ROCK EXCAVATION

ROCK EXCAVATION SHALL BE DEFINED AS EXCAVATION OF ANY HARD NATURAL SUBSTANCE WHICH REQUIRES THE USE OF EXPLOSIVES AND/OR SPECIAL IMPACT TOOLS SUCH AS JACK HAMMERS, SLEDGES, CHISELS OR SIMILAR DEVICES SPECIFICALLY DESIGNED FOR USE IN CUTTING OR BREAKING ROCK, BUT EXCLUSIVE OF TRENCH EXCAVATING MACHINERY.

L. DEWATERING

UTILITIES SHALL BE LAID "IN THE DRY", UNLESS OTHERWISE APPROVED. TRENCH EXCAVATIONS MAY BE DEWATERED BY USING ONE OR MORE OF THE FOLLOWING METHODS: WELL POINT SYSTEM, SUMPS WITH PUMPS, OR OTHER METHOD(S) AS APPROVED BY THE OWNER AND ENGINEER. DEWATERING SYSTEMS SHALL BE UTILIZED IN ACCORDANCE WITH GOOD STANDARD PRACTICE AND MUST BE EFFICIENT ENOUGH TO LOWER THE WATER LEVEL IN ADVANCE OF THE EXCAVATION AND MAINTAIN IT CONTINUOUSLY TO KEEP THE TRENCH BOTTOM AND SIDES FIRM AND DRY. IF THE MATERIAL ENCOUNTERED AT TRENCH GRADE IS SUITABLE FOR THE PASSAGE OF WATER WITHOUT DESTROYING THE SIDES OR UTILITY FOUNDATION OF THE TRENCH, SUMPS MAY BE PROVIDED AT INTERVALS AT THE SIDE OF THE MAIN TRENCH EXCAVATION WITH PUMPS USED TO LOWER THE WATER LEVEL BY TAKING THEIR SUCTION FROM SAID PUMPS, DISCHARGE FROM DEWATERING SHALL BE DISPOSED OF IN SUCH A MANNER THAT IT WILL NOT INTERFERE WITH THE NORMAL DRAINAGE OF THE AREA IN WHICH THE WORK IS BEING PERFORMED, CREATE A PUBLIC NUISANCE, OR FORM PONDING.

THE OPERATIONS SHALL NOT CAUSE INJURY TO ANY PORTION OF THE WORK COMPLETED, OR IN PROGRESS, OR TO THE SURFACE OF THE STREETS OR TO PRIVATE PROPERTY. THE PROPOSED DEWATERING METHOD(S) AND SCHEDULE SHALL BE COORDINATED WITH THE CITY AND APPROVED BY THE ENGINEER AND OTHER NECESSARY REGULATORY AGENCIES PRIOR TO CONSTRUCTION. ADDITIONALLY, WHERE PRIVATE PROPERTY WILL BE INVOLVED, ADVANCE PERMISSION SHALL BE OBTAINED BY THE CONTRACTOR.

M. OBSTRUCTIONS

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACQUAINT HIMSELF WITH ALL EXISTING CONDITIONS AND TO LOCATE ALL UTILITIES AND UTILITIES ALONG THE PROPOSED UTILITY ALIGNMENT IN ORDER TO AVOID CONFLICTS. WHERE ACTUAL CONFLICTS UNAVOIDABLY OCCUR, THE WORK SHALL BE COORDINATED WITH THE FACILITY OWNER AND PERFORMED SO AS TO CAUSE AS LITTLE INTERFERENCE AS POSSIBLE. FACILITIES OR STRUCTURES DAMAGED OR DESTROYED IN THE COURSE OF THE WORK SHALL BE REPAIRED AND/OR REPLACED IMMEDIATELY, IN CONFORMANCE WITH CURRENT STANDARD PRACTICE FOR THE INDUSTRY, AND ACCORDING TO THE DIRECTION OF THE OWNER OF SUCH FACILITY, AT THE CONTRACTOR'S EXPENSE.

N. BACKFILL

(1) GENERAL

BACKFILL MATERIAL SHALL BE CLEAN EARTH FILL COMPOSED OF SAND, CLAY AND SAND, SAND AND ROCK, CRUSHED ROCK, OR AN APPROVED COMBINATION THEREOF. BACKFILLING SHALL BE ACCOMPLISHED UNDER TWO (2) SPECIFIED REQUIREMENTS: FIRST LIFT, FROM TRENCH GRADE TO A POINT TWELVE (12) INCHES ABOVE THE TOP OF THE UTILITY; AND, SECOND LIFT, FROM THE TOP OFF THE FIRST LIFT TO THE GROUND SURFACE. WHERE THRUST BLOCKS, ENCASEMENTS, OR OTHER BELOW GRADE CONCRETE WORK HAVE BEEN INSTALLED, BACKFILLING SHALL NOT PROCEED UNTIL THE CONCRETE HAS OBTAINED SUFFICIENT STRENGTH TO SUPPORT THE BACKFILL LOAD.

(2) FIRST LIFT

FINE MATERIAL SHALL BE CAREFULLY PLACED AND TAMPED AROUND THE LOWER HALF OF THE UTILITY. BACKFILLING SHALL BE CAREFULLY CONTINUED IN LAYERS NOT EXCEEDING SIX (6) INCHES IN THICKNESS FOR THE FULL TRENCH WIDTH. UNTIL THE FTY IS TWELVE (12) INCHES ABOVE THE TOP OF THE UTILITY, USING THE BEST AVAILABLE MATERIAL FROM THE EXCAVATION IF APPROVED. THE MATERIAL FOR THESE FIRST LAYERS OF BACKFILL SHALL BE LOWERED TO WITHIN TWO (2) FEET ABOVE THE TOP OF PIPES BEFORE IT IS ALLOWED TO FALL. UNLESS THE MATERIAL IS PLACED WITH APPROVED DEVICES THAT PROTECT THE PIPES FROM IMPACT. THE "FIRST LIFT" SHALL BE THOROUGHLY COMPACTED AND COMPLETED BEFORE THE "SECOND LIFT" IS PLACED. COMPACTION SHALL EQUAL NINETY-EIGHT (98) PERCENT OF MAXIMUM DENSITY, AS DETERMINED BY AASHTO SPECIFICATION T-180 (ASTM D-1557). THE "FIRST LIFT" BACKFILL SHALL EXCLUDE STONES, OR ROCK FRAGMENTS LARGER THAN THE FOLLOWING:

PIPE SIZE	FRAGMENT SIZE (GREATEST DIMENSION - INCHES)
CONCRETE	3
STEEL	3
CAST IRON	3
DUCTILE IRON	3
CORRUGATED METAL	3
VITRIFIED CLAY	3/4
PLASTIC (PVC, ABS, ETC.)	3/4

(3) SECOND LIFT

THE REMAINDER OF THE TRENCH, ABOVE THE "FIRST LIFT", SHALL BE BACKFILLED IN LAYERS NOT EXCEEDING NINE (9) INCHES. THE MAXIMUM DIMENSION OF A STONE, ROCK OR PAVEMENT FRAGMENT SHALL BE SIX (6) INCHES. WHEN TRENCHES ARE CUT IN PAVEMENTS OR AREAS TO BE PAVED, COMPACTION, AS DETERMINED BY AASHTO SPECIFICATION T-180 (ASTM D-1557), SHALL BE ACCOMPLISHED TO NOT LESS THAN NINETY-EIGHT (98) PERCENT OF MAXIMUM DENSITY, WITH COMPACTION IN OTHER AREAS NOT LESS THAN NINETY (90) PERCENT MAXIMUM DENSITY.

(4) COMPACTION METHODS

THE ABOVE SPECIFIED COMPACTION SHALL BE ACCOMPLISHED USING ACCEPTED STANDARD METHODS (POWERED TAMPERS, VIBRATORS, ETC.) WITH THE EXCEPTION THAT THE FIRST TWO (2) FEET OF BACKFILLING OVER THE PIPE SHALL BE COMPACTED BY HAND-OPERATED TAMPING DEVICES. FLOODING OR PUDDLING WITH WATER TO CONSOLIDATE BACKFILL IS NOT ACCEPTABLE, EXCEPT WHERE SAND IS ENCOUNTERED AND THE OPERATION HAS BEEN APPROVED BY THE OWNER AND THE ENGINEER.

(5) TESTING

DENSITY TESTS FOR DETERMINATION OF THE ABOVE SPECIFIED COMPACTION SHALL BE MADE BY A TESTING LABORATORY APPROVED BY THE OWNER AND THE ENGINEER. TEST LOCATIONS WILL BE DETERMINED BY THE APPLICABLE REGULATORY AGENCY AND THE ENGINEER, BUT IN ANY CASE, SHALL BE SPACED NOT MORE THAN 300 FEET APART WHERE THE TRENCH CUT IS CONTINUOUS IN PAVEMENTS OR AREAS TO BE PAVED. TESTS SHALL ALSO BE MADE WHERE A TRENCH CROSSES A PAVED ROADWAY OR FUTURE PAVED ROADWAY.

IF ANY TEST RESULTS ARE UNSATISFACTORY, THE CONTRACTOR SHALL RE-EXCAVATE AND RE-COMPACT THE BACKFILL AT HIS EXPENSE UNTIL THE DESIRED COMPACTION IS OBTAINED. ADDITIONAL COMPACTION TESTS SHALL BE MADE TO EACH SIDE OF AN UNSATISFACTORY TEST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXTENT OF RE-EXCAVATION AND RE-COMPACTMENT NECESSARY.

O. PROTECTIVE CONCRETE SLAB

PROTECTIVE CONCRETE SLABS SHALL BE INSTALLED OVER THE TOP OF TRENCHES, WHERE REQUIRED ON THE PLANS AND DETAILED THEREON, TO PROTECT THE INSTALLED UTILITY AGAINST EXCESSIVE LOADS, OR WHERE INSUFFICIENT COVER EXISTS.

P. SIDEWALK AND DRIVEWAY RESTORATION

EXISTING SIDEWALKS AND DRIVEWAYS REMOVED, DISTURBED OR DESTROYED BY CONSTRUCTION, SHALL BE REPLACED OR REPAIRED. THE FINISHED WORK SHALL BE EQUAL TO ALL RESPECTS TO THE ORIGINAL AND SHALL BE APPROVED BY THE APPLICABLE REGULATORY AGENCY AND THE ENGINEER.

Q. ROADWAY AND PAVEMENT RESTORATION

(1) GENERAL

PAVEMENT OR ROADWAY SURFACES CUT OR DAMAGES SHALL BE REPLACED BY THE CONTRACTOR IN EQUAL OR BETTER CONDITION THAN THE ORIGINAL, INCLUDING STABILIZATION, BASE COURSE, SURFACE COURSE, CURB AND GUTTER, OR OTHER APPURTENANCES. THE CONTRACTOR SHALL PROVIDE ADVANCE NOTICE TO THE APPROPRIATE AUTHORITY, AS REQUIRED, PRIOR TO CONSTRUCTION OPERATIONS.

(2) ROADWAY RESTORATION

RESTORATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THESE STANDARDS. THE MATERIALS OF CONSTRUCTION AND METHOD OF INSTALLATION, ALONG WITH THE PROPOSED TEMPORARY RESTORATION DESIGN FOR ITEMS NOT REFERRED OR SPECIFIED HEREIN, SHALL RECEIVE PRIOR APPROVAL FROM THE REGULATORY AGENCY AND THE ENGINEER.

(a) WHERE EXISTING PAVEMENT IS TO BE REMOVED, PRIOR TO TRENCH EXCAVATION LEAVING A UNIFORM AND FLAT SURFACE, THE CONTRACTOR SHALL PROVIDE ADVANCE NOTICE TO THE REMAINING ADJACENT SURFACING. THE WIDTH OF EXISTING PAVEMENT TO BE REMOVED SHALL BE MINIMAL AND PARALLEL.

(b) IMMEDIATELY FOLLOWING THE SPECIFIED BACKFILLING OF THE TRENCH, A TEMPORARY SAND SEAL COAT SURFACE SHALL BE APPLIED TO THE CUT AREAS. THE CONTRACTOR SHALL PROCEED IMMEDIATELY WITH SMOOTH TRAFFIC SURFACE WITH THE EXISTING ROADWAY AND SHALL BE COMPLETED UNTIL FINAL RESTORATION. SAID SURFACING SHALL REMAIN FOR TEN (10) DAYS IN ORDER TO ASSURE THE STABILITY OF THE BACKFILL UNDER NORMAL TRAFFIC CONDITIONS. FOLLOWING THIS PERIOD AND PRIOR TO FIFTEEN (15) DAYS AFTER APPLICATION, THE TEMPORARY SURFACING SHALL BE REMOVED AND FINAL ROADWAY SURFACE RESTORATION ACCOMPLISHED.

(c) IN ADVANCE OF FINAL RESTORATION, THE TEMPORARY SURFACING SHALL BE REMOVED AND THE EXISTING PAVEMENT MECHANICALLY SAWED STRAIGHT AND CLEAN TO THE STIPULATED DIMENSIONS. FOLLOWING THE ABOVE OPERATION, THE CONTRACTOR SHALL PROCEED IMMEDIATELY WITH FINAL PAVEMENT RESTORATION IN ACCORDANCE WITH THESE STANDARDS.

(3) ROADWAY RESTORATION (OTHER LOCATIONS)

WORK WITHIN THE RIGHTS-OF-WAY OF PUBLIC THOROUGHFARES SHALL CONFORM TO THE REQUIREMENTS OF THE GOVERNMENTAL AGENCY HAVING JURISDICTION AND THE ENGINEER.

R. PROTECTION AND RESTORATION OF PROPERTY

DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL TAKE SPECIAL CARE AND PROVIDE ADEQUATE PROTECTION IN ORDER TO MINIMIZE DAMAGE TO VEGETATION, SURFACED AREAS AND STRUCTURES WITHIN THE CONSTRUCTION RIGHT-OF-WAY. EASEMENT SITE, AND TAKE FULL RESPONSIBILITY FOR THE REPLACEMENT OR REPAIR THEREOF. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE FACILITY OWNER OF ANY DAMAGE BY ENCROACHMENT THEREON. SHOULD THE REMOVAL OR TRIMMING OF VALUABLE TREES, SHRUBS OR GRASS BE REQUIRED TO FACILITATE THE INSTALLATION WITHIN THE DESIGNATED CONSTRUCTION AREA, THIS WORK SHALL BE DONE IN COOPERATION WITH THE REGULATORY AGENCY AND THE ENGINEER AND/OR THE LOCAL COMMUNITY WHICH THE WORK TAKES PLACE. SAID VALUABLE VEGETATION, REMOVED OR DAMAGED, SHALL BE REPLANTED, IF POSSIBLE, OR REPLACED BY ITEMS OF EQUAL QUALITY, AND MAINTAINED UNTIL GROWTH IS RE-ESTABLISHED. TOP SOIL DAMAGED IN THE COURSE OF WORK SHALL BE REPLACED WITH AT LEAST A FOUR (4) INCH LAYER OF SUITABLE MATERIAL. FOLLOWING CONSTRUCTION COMPLETION, THE WORK AREA, ALONG THE ROUTE OF THE INSTALLATION SHALL BE MAINTAINED, WITH ELEVATIONS COMPATIBLE WITH THE ADJACENT SURFACE, WITH GRASSING OR HAND RAKING REQUIRED WITHIN DEVELOPED AREAS.

S. CLEAN-UP



WORK SITE CLEAN-UP AND PROPERTY RESTORATION SHALL FOLLOW BEHIND CONSTRUCTION OPERATIONS WITHOUT DELAY. IN ORDER TO FACILITATE AN ACCEPTABLE CONSTRUCTION SITE, DEBRIS AND WASTE MATERIALS SHALL BE REMOVED FROM THE SITE IMMEDIATELY, AND DAILY MAINTENANCE, ALONG WITH ON-GOING CLEAN-UP AND FINAL PROPERTY RESTORATION ACCEPTANCE, SHALL BE AS DIRECTED AND APPROVED BY THE REGULATORY AGENCY AND THE ENGINEER.

ALL CONSTRUCTION COVERED BY THESE PLANS SHALL COMPLY WITH THE MATERIAL REQUIREMENTS AND QUALITY CONTROL STANDARDS CONTAINED IN THE SUMTER COUNTY LAND DEVELOPMENT CODE.



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BEI JOB NO. 09-53, FILE NO. K-10, DRAWING NO. Base 09-53, LAYOUT

Revision:	BY:	Date:	Drawn by:	Provided by:	Approved Date	Date	CONTINENTAL SUBSTATION CIVIL INFORMATION INSTALLATION SPECIFICATIONS	Work Order
			DFS		03/19/10	MAR 2010		900852
			Scale NTS		Approved By K. RODRIQUE	Engineer KEN FRINK	Drawing #	CO- 02 - 110

KEN FRINK, P.E.
REG. ENGINEER NO. 47750
STATE OF FLORIDA
DATE _____



July 15, 2010

Aimee Webb
Sumter County Board of County Commissioners
910 North Main Street, Suite 301
Bushnell, FL 33513

Subject: SECO Continental Substation
Project # 09-53



Dear Aimee:

Thank you for the opportunity to meet with the DRC and discuss the County's comments on the referenced project. Below you will find my response to the various comments. I have attached copies of the letters from the various departments for reference. Also attached you will find 4 signed and sealed copies of the construction plans and other information discussed below; all of which are also included on the enclosed CD:

Division of Planning and Development

- 1 Please see updated sheet 105 which has the property dimensions added.
2. Please see the revised Site Data table on sheet 105 which has the future land use added.
3. I reviewed the original project submittal which included a signed and sealed landscape plan with the requested buffer detail (It is also on the CD I sent). I did add a note to the construction plans making reference to the landscape plans for the planting of the buffers.
4. As discussed at the TRC meeting, the survey shown in the construction plans is for reference only, the June 16, 2010 submittal included a stand alone 11 x 17 signed and sealed copy of the survey
5. As discussed in the TRC I have attached an exhibit which shows the existing site improvements.
6. Please see the updated sheet 105 which has the corrected setbacks shown.

County Engineer

- 1 Please see the updated sheet 104 with the corrections made.
2. The callout on sheet 105 to remove the western drives, now includes the eastern drive and pipe.
3. A submittal has already been made to Public Works for the access to CR 143 and should have already been issued. As of now, we have not received a copy.

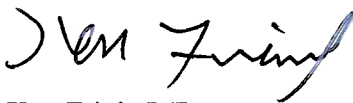
July 15, 2010

4. FDOT has issued an exemption from drainage permitting and an intent to issue an access permit. Copies of which are attached. Please note that the FDOT access permit is contingent upon FDOT receiving confirmation that the local governmental authority (Sumter County) has approved the plans, as such we request that the Notice of Intent be sufficient for your review
5. A stop bar has been added to the CR 143 driveway as requested.
6. The driveway on to CR 143 has been revised to include 35' radius returns.
7. The requested detail can be found within section A-A on sheet 105. A note has been added to sheet 106 clarifying this.
8. As discussed in the TRC meeting, our experience has been that the turn down elbows actually encourage clogging and a strainer basket is more efficient and has been added to sheet 107.
9. The weir width has now been added to sheet 107 of the plans.
10. As discussed in the TRC meeting, the DRA is adjacent to a wetland which is conducive to the natural establishment of native vegetation. As such, no plantings (other than sod on the side slopes) are proposed in the DRA bottom. Out of an abundance of caution, I discussed this with the landscape architect on the project and he agrees with that approach.
11. A copy of the FDEP completeness letter as well as a no permit required letter from the ACOE was included in our original submittal. Per the operating agreement between SWFWMD and FDEP, SWFWMD relinquished permitting authority to FDEP for electrical substations, so a permit will not be necessary from that agency.

I trust the above application is now complete but should you have any questions or need additional information please do not hesitate to give me a call.

Sincerely,

Burrell Engineering, Inc.



Ken Frink, P.E.
Project Manager
Vice President

cc: Lester Sumner, SECO

Burrell Engineering, Inc.

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